

MANUFACTURERS RECORD

A Weekly Newspaper Devoted to the Industrial, Financial, Railroad,
Mining, Contracting, Engineering, Building, and General
Business Interests of the South and Southwest

Vol. 61
No. 2

ESTABLISHED 1882

\$4.00 Per Year
Single Copy 15 Cents

In This Issue:

Reclamation of Florida Everglades
and Results Looked For.

Promise in the Iron Ores of Texas.

Cotton's Weight in the Country's
Commerce.

Immigration to the South.

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Classified Index, Pages 116 to 121.
Classified Opportunities, Pages 82, 83 and 84.

BALTIMORE, JANUARY 18, 1912

B. t. u.**THE MEASURE OF HEAT**

The term British thermal unit (abbreviated B. t. u.), often confronts the user of coal.

As a yard stick is a measure of length, a B. t. u. is a measure of heat. The total amount of heat contained in a pound of fuel, all of which is liberated by complete combustion, is expressed in B. t. u's. A single heat unit is the amount of heat required to raise the temperature of one pound of water one degree Fahrenheit at atmospheric temperature. Heat units make steam and steam makes power.

Below are tabulated, from some of the highest scientific authorities, the heat values of the commoner combustibles contained in coal:

SUBSTANCE	B. t. u. Per Lb.	
Acetylene Gas	21,465	Included in the "Volatile Matter" of proximate analysis.
Marsh Gas	23,515	
Olefiant Gas	21,345	
Hydrogen Gas	62,035	
Carbon	14,450	"Fixed Carbon" of proximate analysis.

CLINCHFIELD COAL IS HIGH IN HEAT VALUE

Clinchfield coal is rich in Hydrogen and the Hydro-Carbon gases shown above. These "VOLATILE" gases burn above the fuel bed with rapidity and great intensity in close proximity to the boiler surfaces. Quick liberation of heat units means quick generation of steam; hence the economy in using Clinchfield coal which maintains boilers at high capacity easily and continuously, thus delivering more than the rated horsepower. Clinchfield coal ranges from 14,000 to 14,700 heat units per pound, because it contains small percentages of oxygen, moisture and ash, which are valueless, and large percentages of the combustibles highest in heat value.

OUTPUT OF MINES OF**CLINCHFIELD COAL CORPORATION**

2,000,000 Tons Per Annum, and Growing

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Selling Agent

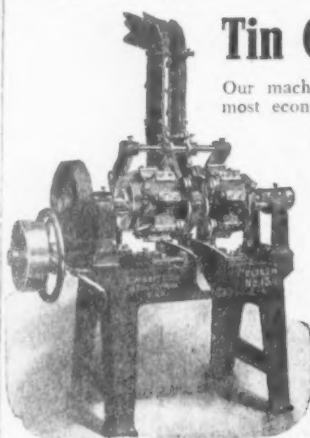
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Southern Terminal C., C. & O. Ry.

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FOR ALL USES**

You will find our prices and goods "RIGHT"

Send complete specifications. Send for Metal sample plate. Erdle Perforating Co., Rochester, N. Y.

**Tin Can Machinery**

Our machines give greatest production with most economical tin and solder consumption.

Complete equipments for Open Top and Packers' Cans for fruits, vegetables, fish, meats, soups, condensed milk, etc., also for paint cans, baking powder cans, lard pails, butter tins, tin boxes and packages—round, square, oval and oblong. Send samples, state requirements. See what we can do for you.

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Send for Can Machinery Cat. 14F.

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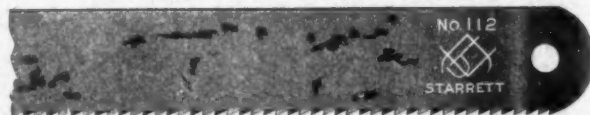
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Ash or Coal Barrows**

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THREE SIZES

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Starrett Hack Saw Frames

will immediately be coveted by a good mechanic—he will see the many special features and the fine quality of workmanship and finish.

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17 N. Jefferson St.

London,

36-37 Upper Thames St., E. C.

B-14







Strong Words from Strong Men but they Know.

Ex - Fire - Chief Croker says:
"Automatic sprinklers and automatic alarms should be installed to the last limit of precaution. There is no case where the old adage, 'an ounce of prevention is worth a pound of cure,' is as true as with fire."

Fire-Chief Kenlon of New York says: "At least 60 percent of the loft buildings in lower Manhattan are protected by automatic sprinklers. The unprotected 40 percent are without doubt the greatest menace to human life now existing in New York City."

GRINNELL AUTOMATIC SPRINKLERS

would give the needed protection, and remove the worry. It is claimed that the first fire death is yet to be recorded in a factory protected by automatic sprinklers.

Automatic sprinkler systems add but little to the cost of the average building; but they increase the renting value of the building, and they so reduce the price of insurance as to pay for themselves within five years.

Our Periodical

The Automatic Sprinkler Bulletin

is full of information about sprinkler protection. You will receive it regularly if you ask for it.

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40-13

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Ingram-Graham Elec. Co., Jacksonville, Fla. City, Tenn.
Norton Hdw. Co., Norton, Va. Woodward-Wright & Co., New Orleans, La.
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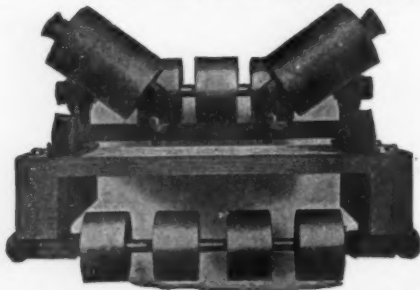
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**Alabama Consolidated Coal & Iron
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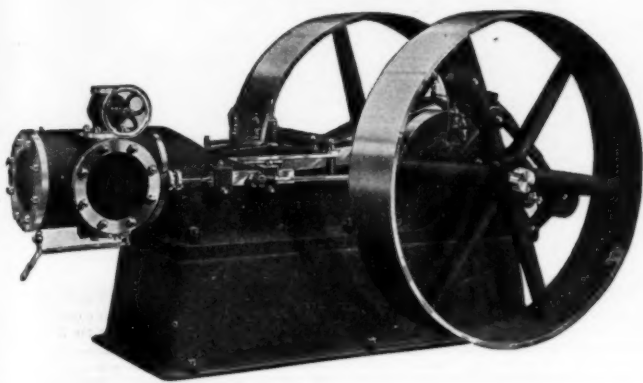
Birmingham, Alabama

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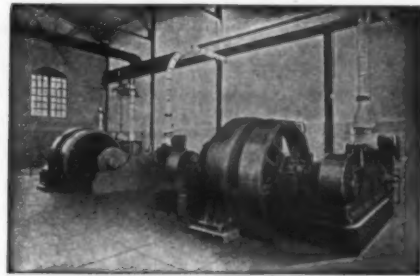
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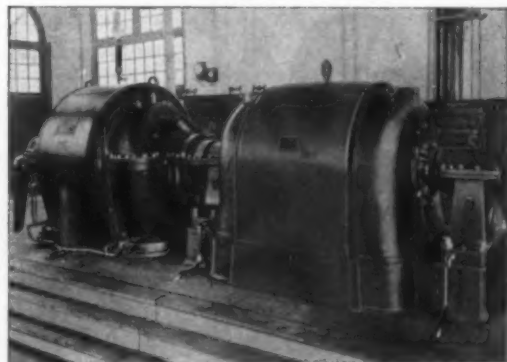
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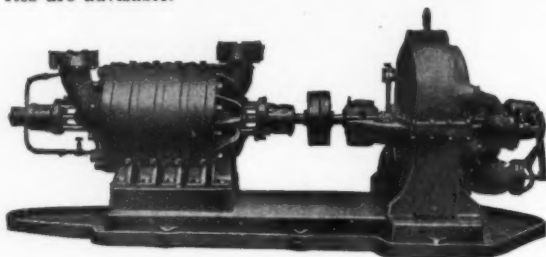
New York, 165 Broadway.
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Atlanta, Candler Building.St. Louis, Chemical Building.
Pittsburgh, Westinghouse Building.
Cleveland, New England Building.Chicago, 39 South La Salle Street.
Cincinnati, 1103 Traction Building.
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M-7

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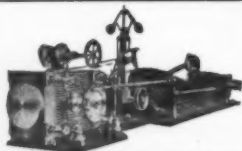
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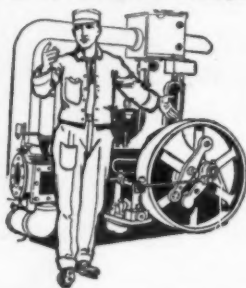
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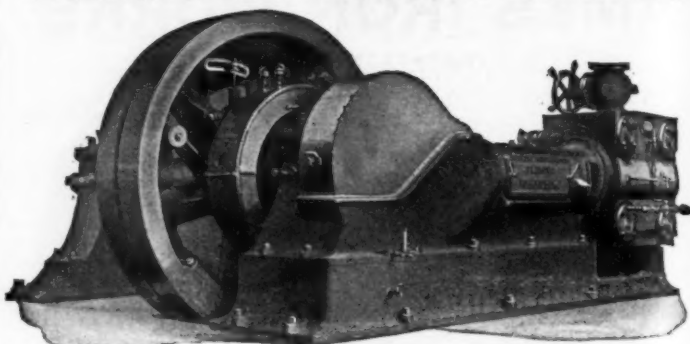
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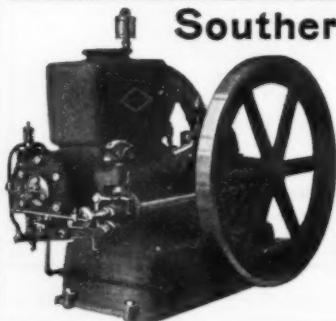
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Two cycle type.

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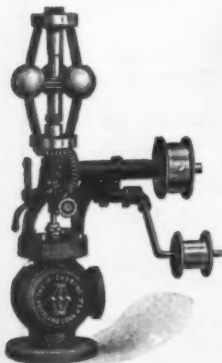
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Directness of Action Gives
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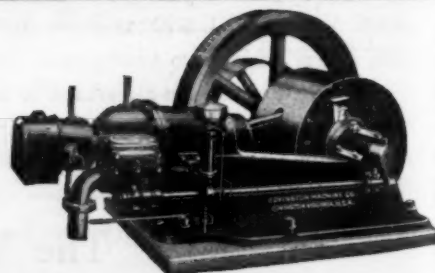
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when installed, but equal efficiency under continued
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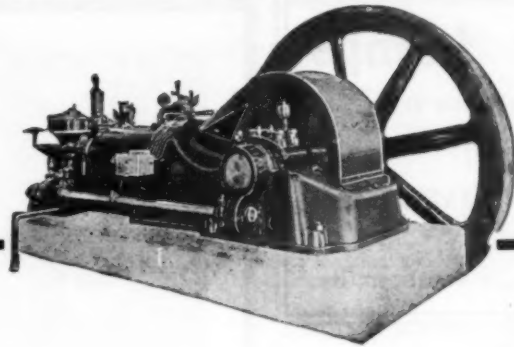
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ECONOMY

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Otto engines are built in all sizes from one to 300 horse power and are designed to operate on city and natural gas, producer gas, gasoline, alcohol and distillate.

Tell us about your power situation and our Engineering Department will submit data that will be mighty interesting and convincing.



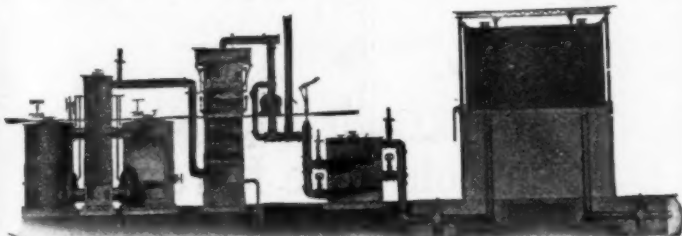
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The Loomis-Pettibone Gas Generating System

produces a clean, fixed gas absolutely free from tar.

The fire is always in sight of the operator, permitting an even distribution of fuel—no poking is required.

The patented down draught system keeps charging floor cool and free from noxious gases.

Lowest operating and maintenance cost—combined with highest efficiency—200,000 horsepower now in successful operation.

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District Offices: New York, Chicago, Birmingham, El Paso, San Francisco

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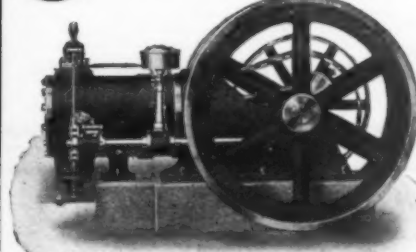
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M122.2



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Bogart Engines are made in all sizes to meet all power conditions. They give no trouble. No cylinder packing to blow out. Adjustable ignition. Lots of other good points shown in our illustrated bulletin No. 21.



The Engine That Will Meet Your Expectations
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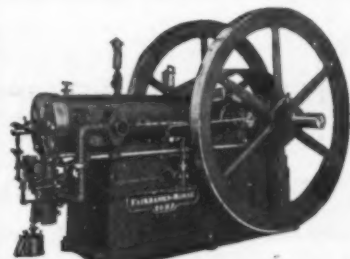


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Fairbanks-Morse Oil Engines

will effect economies in
Power Cost up to as
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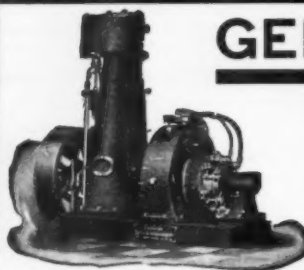
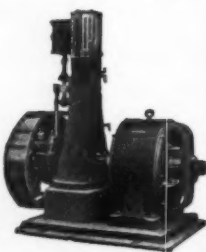
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Write us for prices.

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CINCINNATI, OHIO



2½ to 50 Kilowatt.

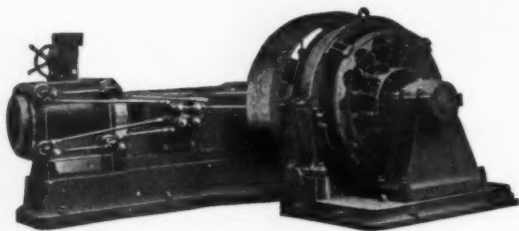
GENERATORS

STEAM OR GASOLINE OPERATED

With one of these machines you can produce electric current on the most economical basis. They are very simple in construction, reliable, and require but very little attention. Send for our prices, descriptive bulletins and testimonial booklet.

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Vine St., St. Joseph, Mich., U. S. A.



THE Cost of Generating Current in your power plant is a large factor in the success of your business, and worthy of the most careful and painstaking consideration.

Steam Engine Economy enters largely into this cost, and profits depend upon how successful you have been in selecting and installing **ECONOMICAL ENGINES**.

Ridgway Four-Valve Engines

have established a record for **Extreme Economy**. They are a permanent and paying asset.

The **RIDGWAY** Direct and Alternating current generators are highly efficient, and have many strong points that appeal to buyers of high-grade power equipment.

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RIDGWAY, PA.



Do you know what possibilities of economy **Crocker-Wheeler Motor-Drive** holds for your plant?

We know of one plant that is now operating on the power originally wasted in friction.

Your plant may have similar possibilities of economy. At any rate, wouldn't it pay you to find out?

A line to our nearest office puts us at your command.

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LOCAL SELLING REPRESENTATIVE: Tel-Electric Co., Houston, Texas.

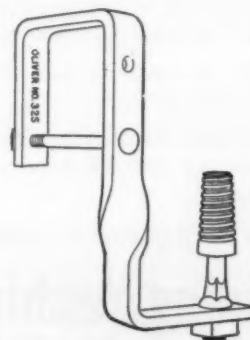
Oliver Iron & Steel Co.

Manufacturers of

Telegraph and Telephone Pole Line Hardware

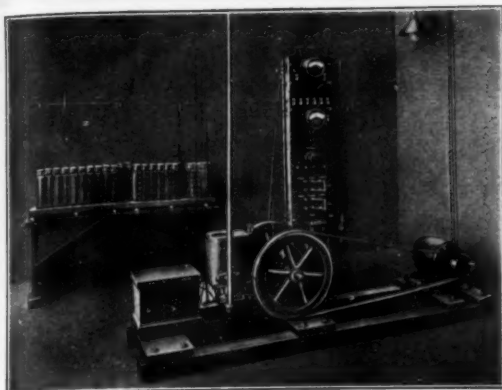
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Full and complete stock of their Standards on hand and immediate shipment guaranteed. Write for circular.

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A plant occupies only a small space. You can put it in a corner of your cellar or in some small out-building. With gasoline at 16 cents per gallon, one tenth of a cent's worth will light a 16-candle power lamp one hour. The very best form of illumination at very low cost.

Electric Lighting Plants for Every Purpose

Farms, factories, summer homes, etc., although situated beyond the reach of Central Stations, are no longer deprived of the advantages of electricity. Small and inexpensive electric lighting plants can now be furnished which give an absolutely reliable service and which can be easily installed and operated by nearly any one.

A complete plant consists of a small gas engine, dynamo, switchboard and storage battery. Electric lights are available any time of the day or night—a full 24-hour service—by only an occasional running of the engine to charge the battery.

The "Chloride Accumulator"

furnished with these plants is the same type of battery used by the electric lighting companies in nearly all the large cities, as well as being the standard battery with the Western Union and Postal Telegraph Companies and the Bell Telephone Companies.

Any Sales Office will send you a copy of our book on "Small Electric Lighting Plants," which will give you complete information. Write for it today.

THE ELECTRIC STORAGE BATTERY CO.

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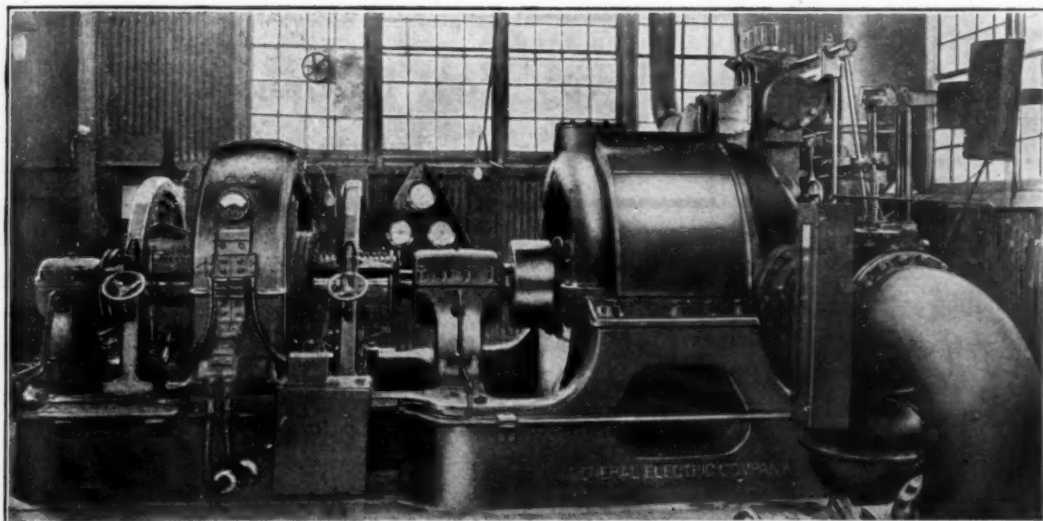
PHILADELPHIA, PA.

1912

Atlanta Sales Office, Candler Building

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Nearly 2,000,000 KW. of Curtis Turbines
are in use—more than the total of
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500 KW. Mixed Pressure Curtis Turbine at Atlanta Steel Company operating on exhaust steam from rod and blooming mill engines or live steam from boiler plant.

Two of these turbines with suitable motors replaced six or seven small inefficient engines, making an overloaded boiler plant more than adequate with one to three boilers off all the time.

They have operated over a year under these conditions, running one hundred and thirty-two hours a week, and have been extremely satisfactory.

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3108

1¢ a burning hour 1¢
100
candle power
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THE SAFETY CAR HEATING
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WE HAVE MOVED
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CAROLINA ELECTRICAL COMPANY

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"Tonic" Lamp Posts
FOR ELECTRICITY OR GAS
Write for Particulars.

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ALUMINUM
Electric Conductors, Ingots, Bars, Plates,
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COMPANY.
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A small defect INSURE Such defects
may cause an explosion if not repaired in time YOUR STEAM BOILERS can be found only by a thorough inspection

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BALTIMORE
Surplus and Reserves for Policyholders over
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Our large corps of inspectors are men of long experience and ability AGENTS EVERYWHERE Inspections made regularly, promptly and thoroughly



You Wouldn't Make Your Operatives Punch a Busted Time Clock

They punch the clock because you want to account for every hour—that's business. But is it good business to register their "ins" and "outs" and then waste the time you pay for by making them work under poor light? You know that eye-strain, headache, inaccuracy, carelessness, spoilage and waste time are caused by poor light.

Holophane Steel Reflectors make poor light good. They save all the light now wasted over the walls and ceiling. They concentrate it where it is wanted, without glare or shadows.

Holophane Steel Reflectors increase your output, because every hour that is registered on the time clock will be utilized. There will be less spoilage, fewer accidents, and the cost of your light will be reduced as well.

Don't wait. You need Holophane Steel Reflectors today.

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Sales Department
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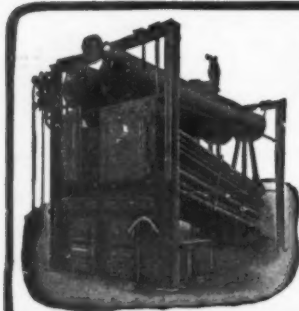
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Advise us of your requirements. Our prices interest.

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The Improved ROOT WATER TUBE BOILER

Embodying to the highest degree Fuel Economy, Easy Steaming Qualities, Safety, Low Cost of Maintenance and Large Overload Capacity.

Manufactured by

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MANUFACTURERS OF
PORTABLE AND HORIZONTAL TUBULAR
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BOILERS TANKS STACKS

Pumps, Heaters, Injectors, Engine
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Water Tube Steam Boilers

STEAM SUPERHEATERS

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WORKS—BAYONNE, N. J.

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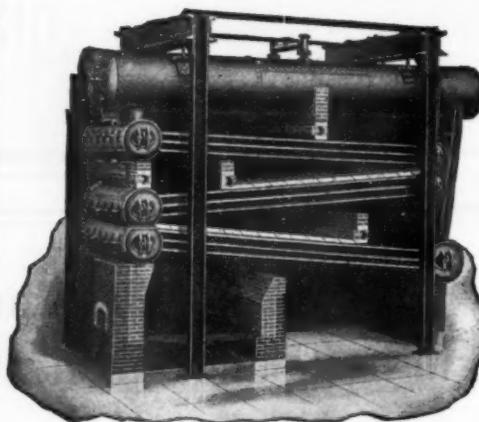
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A STEAM PRODUCER VOGT WATER TUBE BOILER



As a satisfactory, efficient steam producer, our water tube boiler stands out among the different makes of boilers throughout the country.

Complete combustion. Arrangement of tubes gives the water very rapid circulation. Steam capacity

greatly enhanced by the hot gases outside the tubes.

Many other features of interest to the boiler users. Let us send catalogue.

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Louisville, Ky.

Increase Your Boiler Room Efficiency

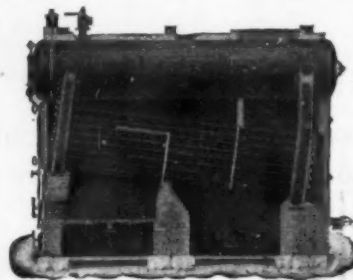
GEARY WATER TUBE BOILERS

built in an up-to-date plant by expert boiler makers will do it. Units 30 to 650 H. P. to meet all conditions. The Geary boilers combine safety, convenience, capacity and economy.

There is a Geary boiler in your vicinity; look it up and you will see it is giving satisfactory service in every way.

Write for interesting booklet.

Oil City Boiler Works
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HEINE Water Tube BOILERS

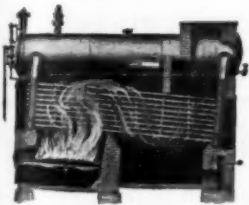
For every service requiring high pressure steam

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E. KEELER COMPANY, Established 1864

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All Wrought Steel Construction.

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Stand Pipes, Self-Supporting Stacks, Tanks, Towers, all kinds of Structural and Plate Iron Work.
Boiler Fronts, Grate Bars, Kiln Wheels, all kinds of Castings made to order.

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Friction, Leakage, Waste Power Practically Overcome With**J-M SEA RINGS**

With this ideal Automatic Piston Rod and Plunger Packing, friction is practically eliminated, leakage entirely prevented and waste energy avoided. It effects a considerable saving in fuel, and is the most efficient, durable and economical piston rod packing on the market.

As every engineer knows, there is practically no pressure through the stuffing box during the forward stroke of piston, and a variable pressure, ranging from initial to atmospheric or lower, on the return stroke.

The amount of pressure J-M Sea Rings exert on the rod is in direct ratio to the pressure through the stuffing box—never more nor less—because they require pressure behind their lips to force them against the rod. And as this pressure drops off in the gland end of cylinder, the pressure of rings on the rod diminishes.

Compare the action of J-M Sea Rings, which automatically exert and release their pressure on the rod, with the old type of packing which grips the rod constantly, or in plainer words, acts as a brake consuming an enormous amount of power.

J-M Sea Rings possess many other good features, all of which are described in our Blue Book.

Your copy awaits you on request to our nearest Branch.

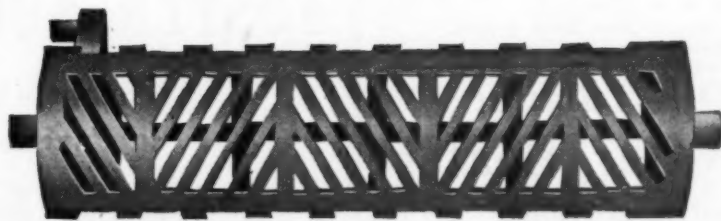
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TOP VIEW LOCOMOTIVE OR ROCKER TYPE.

WHEREVER STEAM IS MADE THOMAS ELLIPTIC GRATE BARS ARE NEEDED

It's the modern grate bar for the modern power plant. Decreases your fuel bill by burning fuel thoroughly. Increases your steam supply by getting more heat out of your fuel to send to the boiler.

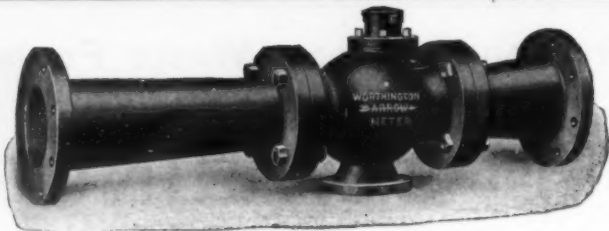
Power plants everywhere—new ones and old established ones—are installing it.

Made for saw-mills, oil mills, ice plants, electric plants, fertilizer factories, mines, locomotives, steamboats and wherever steam is generated.

We are always ready to answer questions and send illustrated matter to those interested.

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BIRMINGHAM, ALA.
Branch, VALDOSTA, GA.

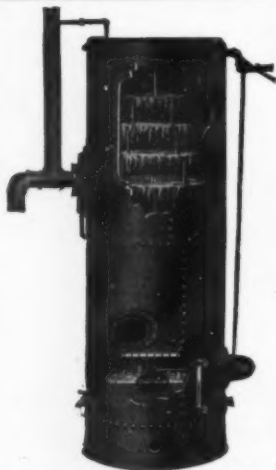


MEASUREMENT OF LARGE FLOWS

of water, up to 250 lbs. pressure, accurately obtained by means of **WORTHINGTON ARROW METER** with but negligible loss of pressure. Operates equally well in vertical or horizontal position. Special celluloid arrow wheel, is self-cleaning. Extremely accurate on small flows.

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W107.1



Improved Heater and Lime Extractor.

BROWNELL

HEATERS SERVE TWO PURPOSES

Heating of Feed Water by Exhaust Steam
Extracting Scale Forming Ingredients.

$\frac{1}{4}$ inch scale in Boilers requires 15% more fuel.
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Save this Extra Fuel by installing
Heater

We also manufacture a complete line of
ENGINES AND BOILERS.

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SELLERS INJECTORS

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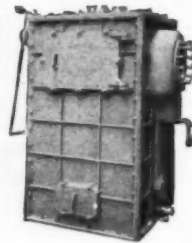
Interchangeable with other forms

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WM. SELLERS & CO., INCORPORATED

THE LIFE AND EFFICIENCY



of your steam boilers will be increased
by installing

BLAKE-KNOWLES OPEN FEED WATER HEATERS

for they not only heat the feed
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ingredients.

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Works: East Cambridge, Mass.

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B142.1

ALBERGER PUMP AND CONDENSER COMPANIES

140 CEDAR STREET, NEW YORK

See Our Special Announcement First Issue Each Month.



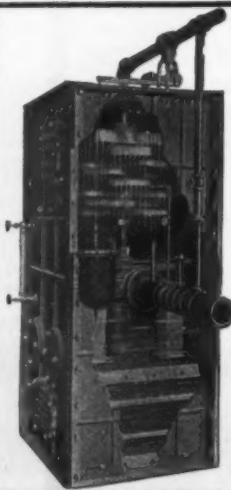
The Otis Tubular Feed Water Heater

Oil Separator and Purifier

Is guaranteed to deliver the water to the boiler at boiling
temperature (210 to 212 degree). It will also extract the oil
from the exhaust, so that the steam after passing through the
heater may be used for other heating purposes and the condensed
water returned to the boiler without any additional
elimination.

Give the Otis a trial, and if you don't find it satisfactory we
will pay the freight and carriage both ways.

The Stewart Heater Co., 3 Norfolk Ave. Buffalo, N. Y.



The Organ Open Feed Water Heater and Purifier

combining in one apparatus—
Feed Water Heater and Purifier,
Oil Separator, Drip Receiver and
Expansion Tanks.

The simplest and most economi-
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Write for Booklet.

The Exeter Machine Works
PITTSBURGH, PA.

FOSTER SUPERHEATERS

Change a Losing Plant to Paying Investment

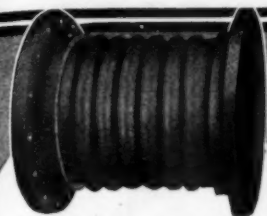
No steam plant can reach its maximum of
fuel economy without the use of superheaters
—a broad but true assertion. Often by in-
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running at a loss may become a paying in-
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pressure or old boilers can be fitted with
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The Foster Superheater has many advant-
ages in the way of saving fuel, of increasing
efficiency of engines, boilers, pumps, etc.,
and of general economy, and we want the
opportunity to lay its merits before all steam
plant owners.

Power Specialty Company

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Our patented joint which insures equal distribution of expansion on each corrugation.

Pipe Troubles Can Be Eliminated

by the use of

**Badger's
Copper Expansion
Joint**

Will take care of the expansion in lines of steam pipe. Will absorb vibration between engine and piping.

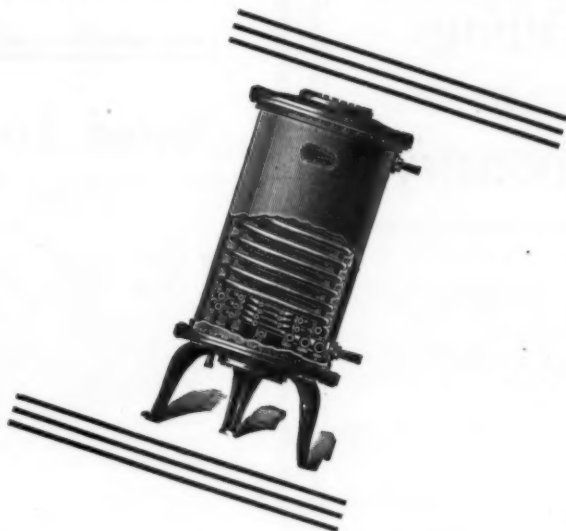
WRITE FOR FULL
PARTICULARS

E. B. Badger & Sons Co.
63-75 Pitts Street Boston, Mass.

There Is No Question Now About

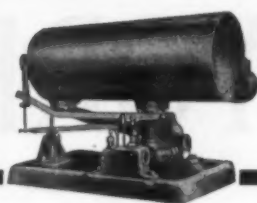
the advisability of a feed-water heater, but there is a question about which kind to use. Many today are glad they tried

A NATIONAL FEED-WATER HEATER



We would like to make you glad, too.
May we send one for trial?

The NATIONAL PIPE BENDING CO., 97 Lloyd Street, New Haven, Conn.



"Detroit" RETURN TRAPS

1911 Model

Keep steam lines free of condensation, automatically returning it to the boiler hot without pumping.

Save 90% of the steam required to operate a pump.

Why "cool down" the condensation to accommodate a pump? It costs money to heat feed water.

Condensation is the best kind of feed water.

By using "Detroit" Return Traps you put condensation into the boiler at practically the same temperature at which it is condensed. Not a drop is wasted. None of the heat is lost.

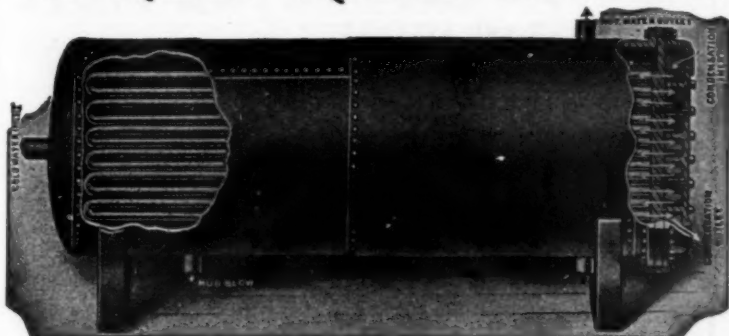
Boiler Feed Pumps are good things for the coal dealer.

"Detroit" Return Traps are good things for the user.

Where shall we mail trap book No. 266-MR? It is brim full of information valuable to operators of steam plants.

AMERICAN BLOWER COMPANY
DETROIT, MICH.
U. S. A.

A NEW KIND OF FEED WATER HEATER



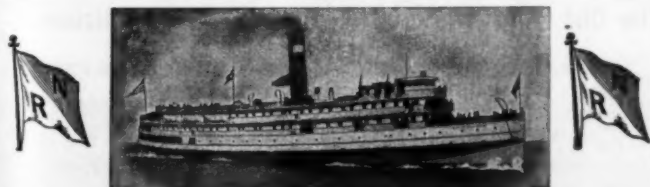
THE GLEANER
—TRADE MARK—

In a great many instances the exhaust from the engine is insufficient to heat the feed water, or it must be used for other purposes. It is for such cases that **THE GLEANER** was devised. Besides using the engine exhaust, it uses waste heat from heating systems, paper machines, dye-tubs, etc., formerly considered valueless. The Gleaner saves every degree of heat which is contained in this waste water and transfers it to fresh water. Let us tell you more about it.

THOS. McADOO, - 125 N. 4th St., PHILA., PA.

(L. B. DAVIS & SON, Makers, HARTFORD, CONN.)

Manufacturers Record, the Medium for Machinery Advertisements.



When Going from Baltimore to Norfolk

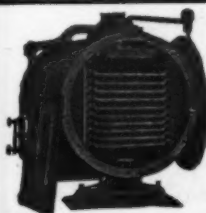
you naturally want to use the safest, speediest, most modernly appointed steamers—the ones furnished like up-to-date, luxurious homes. If so,

USE THE CHESAPEAKE LINE

Two new queens of the Chesapeake, the City of Baltimore and the City of Norfolk, every day, including Sunday, between Baltimore and Norfolk, stop at Old Point Comfort en route, connecting with rail lines for all Southern points. Running water and intercommunicating telephones in each room. Staterooms equipped with shower baths and others connecting with baths. Wireless telegraph aboard. Cuisine unsurpassed. No trouble spared for passengers' comfort.

YORK RIVER LINE three times a week for York River landings, West Point and Richmond.

Chesapeake Steamship Co. GENERAL OFFICES Baltimore, Md.



HOPPES FEED-WATER HEATERS

Not only heat and purify the feed-water, but do it more thoroughly than others because they have a larger heating and lime-catching surface and bring the steam and water into direct contact in the most effective manner. Guaranteed in every respect. Let us send you our Catalog and further particulars.

HOPPES MFG. CO., 97 Larch St., Springfield, O.

HOW ABOUT IT?

Condenser pressure 240 lbs.; no oil; no "frost"; rod temperature 300 Fahr.

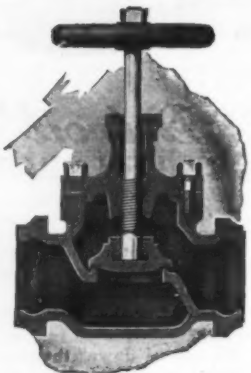
If you'd like the complete story of how this packing ran four months under these conditions in a big Brooklyn, N. Y. ice plant—without rotting, or melting, or blowing, or adjusting or stopping the compressor—and is in there today running as sweet as ever—drop us a postal and we'll write



"BETTER USE HUHNS"

AMERICAN HUHNS METALLIC PACKING CO., 414 East 32nd St. New York City

YORK



Ammonia
Valves
and
Fittings
a
Specialty

Do You Know That We make a Specialty of
Ammonia Valves and Fittings?

This is a separate and distinct part of our business—separate foundry, separate machine shop, separate loading and shipping wharves; in fact, a large section of our works is devoted exclusively to this business.

The foundry devoted to this work is equipped with special melting and annealing furnaces, with the result that our valves and fittings are nearly double the tensile strength of those made in the ordinary way.

Do you know that we carry these valves and fittings and other supplies in stock in all the principal cities? This enables the trade, in cases of emergency, to get whatever they may need in this line without delay.

Shall we send you our Illustrated Catalogue of Ammonia Valves, Fittings, etc., which will enable you to order from our nearest supply houses? Their prices are the same as ours.

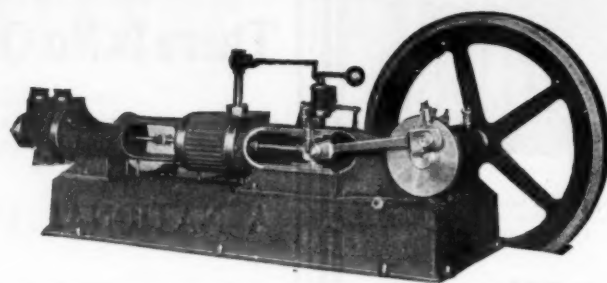
YORK MANUFACTURING CO.

Largest Ice Machine Manufacturers in the World.

Main Office and Works:
York, Pa.

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Monadnock Block, Chicago.

BRANCHES IN ALL PRINCIPAL CITIES.



Noted For Its Efficiency THE ABSORPTION ICE MACHINE

By improved construction the gas going to the condenser is exceedingly dry; the liquor returning to the absorber is very weak, and there is a low back pressure in the expansion coils. These three ideal conditions make a saving in fuel, and render our machine the most efficient, without question, on the market. And it has other real superiorities that it would pay you to look into.

Machines of any
capacity - - -

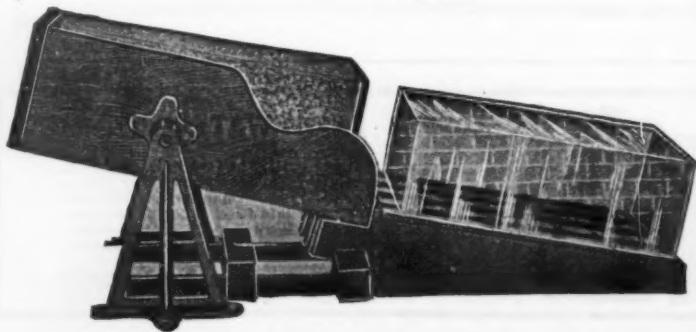
Breweries. - - -
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Cold Storage Plants,
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Henry Vogt Machine Co.

LOUISVILLE, KY.

Our Machines Make
**CLEAN, CLEAR,
PURE ICE**

WRITE US



**Columbus Improved Absorption
Ice Machinery**

COLUMBUS IRON WORKS CO.

COLUMBUS, GA.

WATER SOFTENERS AND FILTERS

Information on request.

AMERICAN WATER SOFTENER CO.

1019 Chestnut St., - PHILADELPHIA

INTERNATIONAL FILTER CO.

Filters

For All Purposes

17th St. and Wabash Ave., Chicago, U. S. A.

LYNN FILTERS

PURE WATER

Residences,
Apartment Buildings,
Hotels, Cafes,
Institutions.

Special Plants for Ice
Factories.

Laundry Filters.

Estimates Furnished.



The Lynn-Superior Co.,

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Branch—100 W. Fayette St., Balto., Md.

Frick Company's Improved Flooded System

The One That Works and Gives Results Anticipated

This system can be easily and quickly installed when your plant is shut down for repairs.

Write us about its merits now!

Investigate it!

Its operation is regular, simple and gives absolute control of the Ammonia System.

The Check Valve (the application of which is being patented) is the principal feature. It prevents backslashing and allows the ammonia to complete its work in the tank.

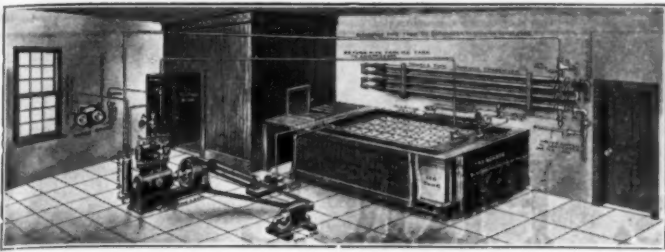
Cost is less than that of Dry Gas System, and better results are produced.

Ask for quotations and particulars.

FRICK COMPANY

WAYNESBORO, PA.

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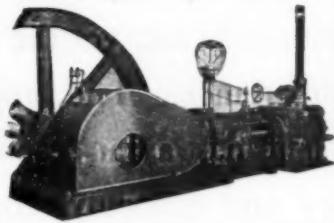
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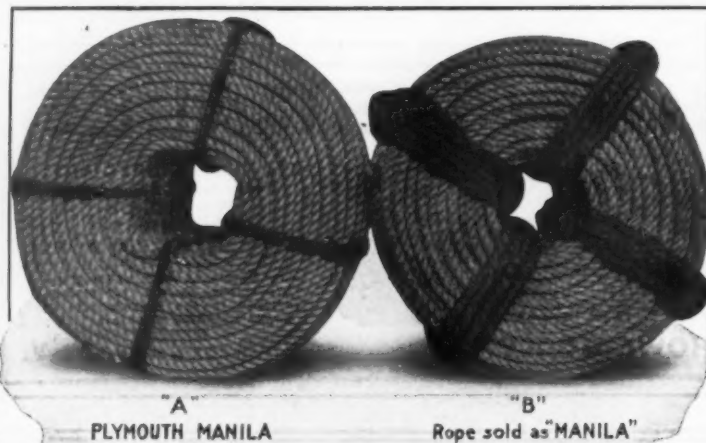
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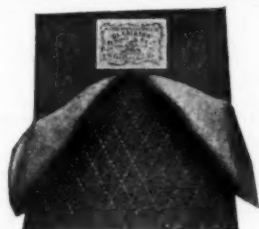
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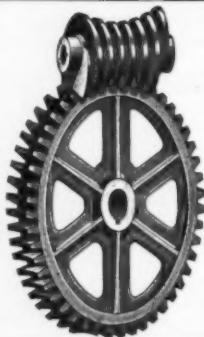
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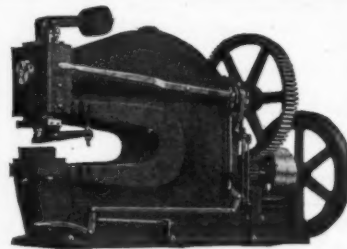
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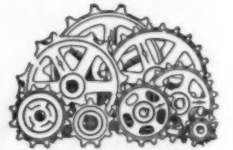
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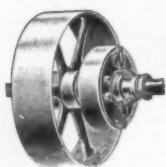
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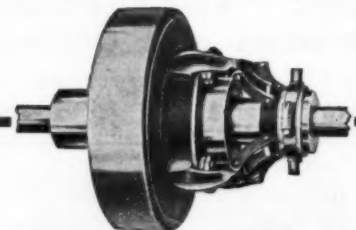
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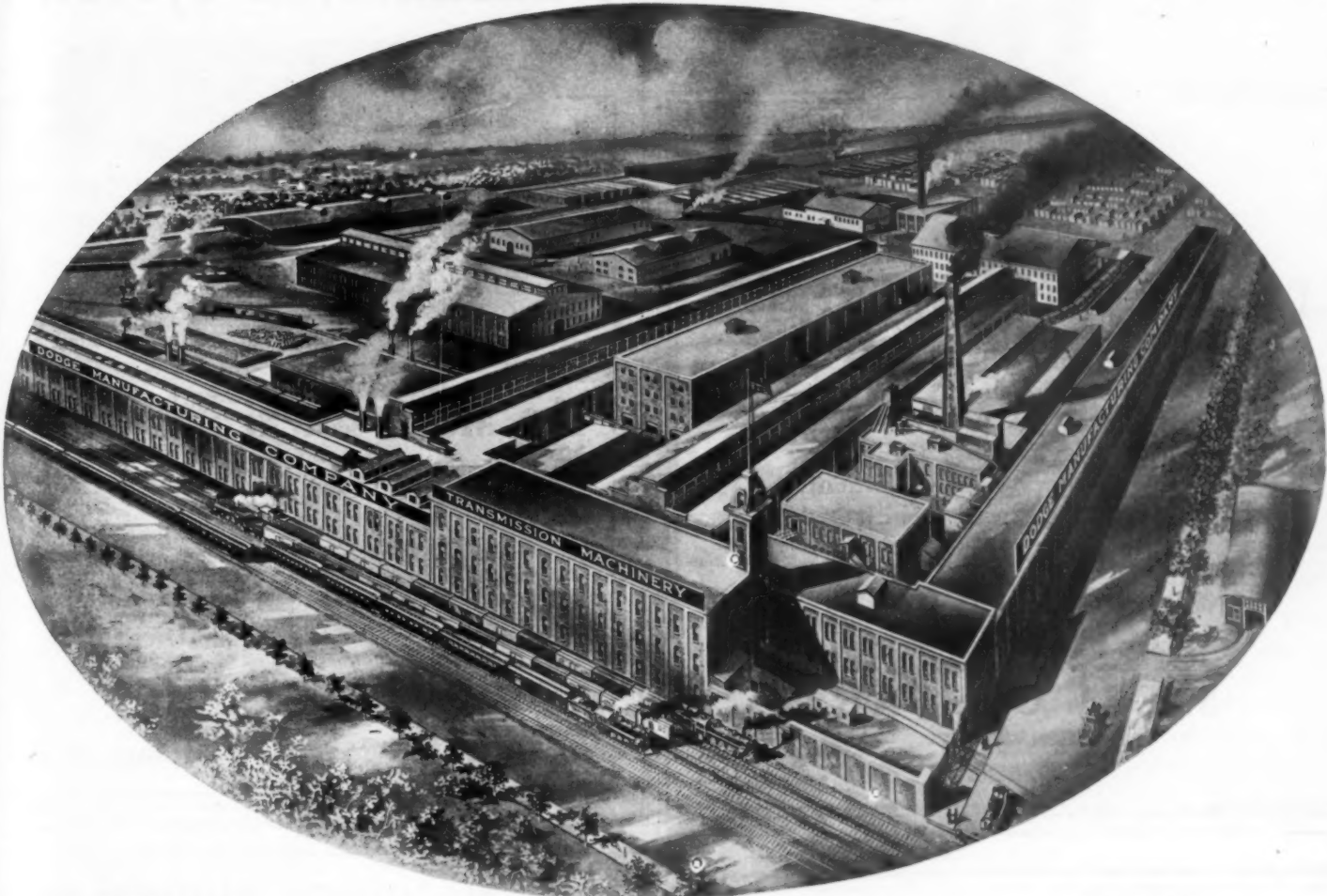


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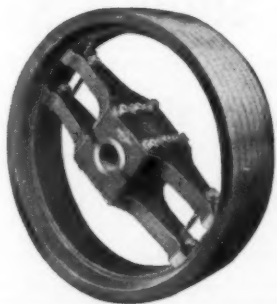
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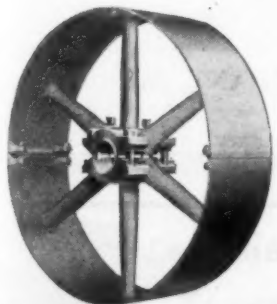
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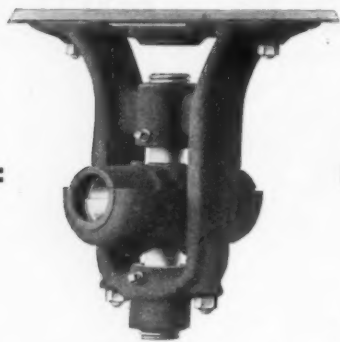
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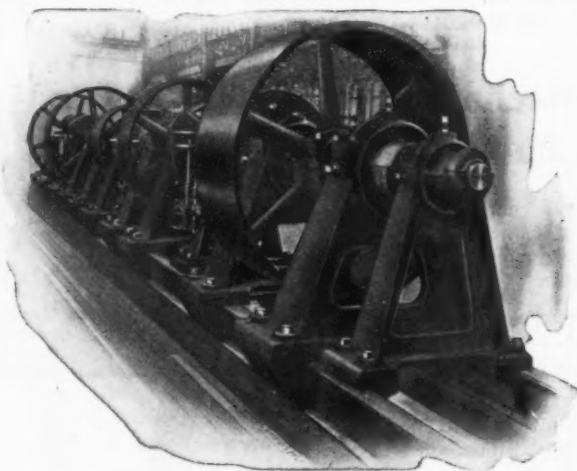
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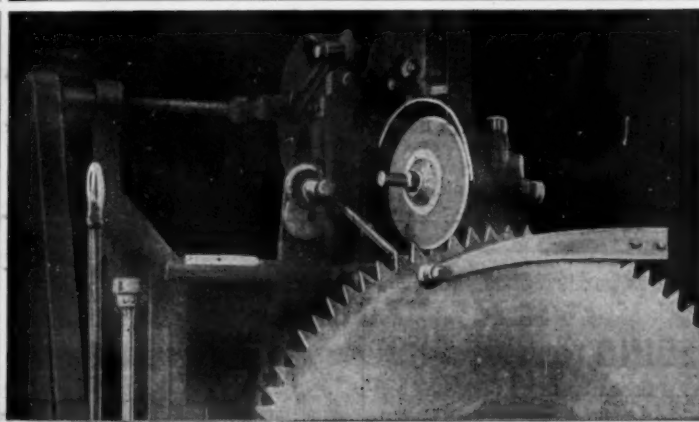
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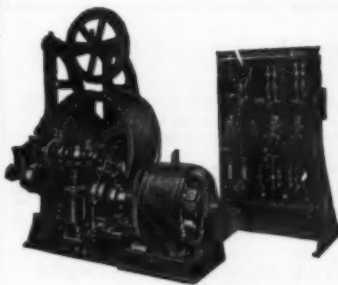


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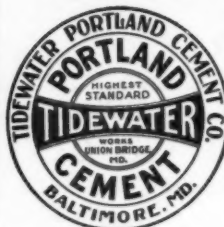
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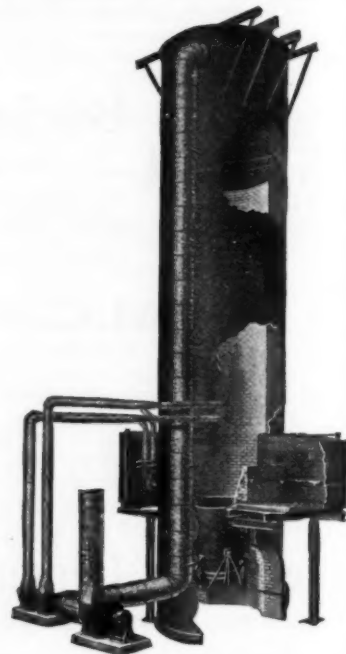
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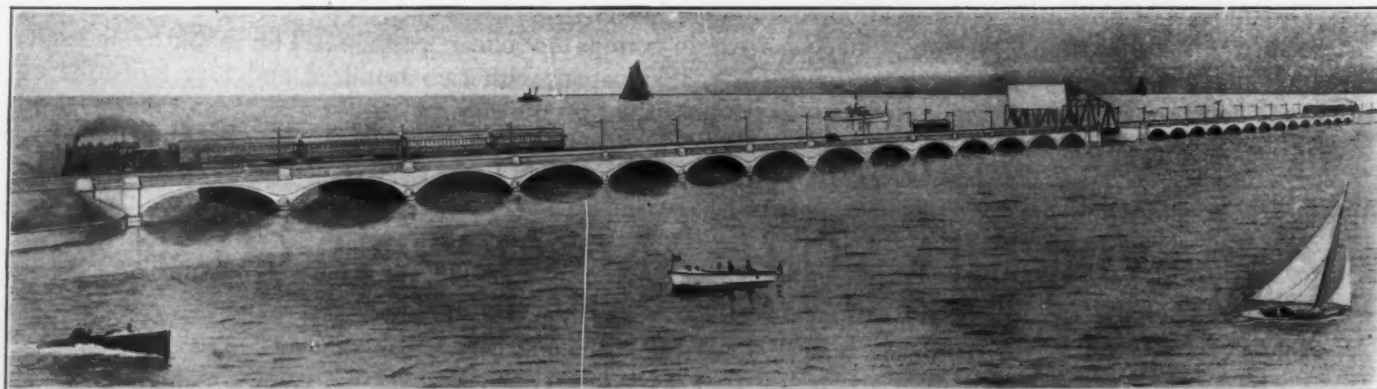
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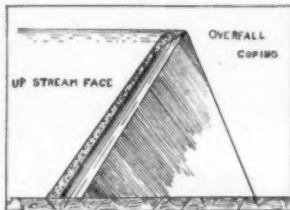
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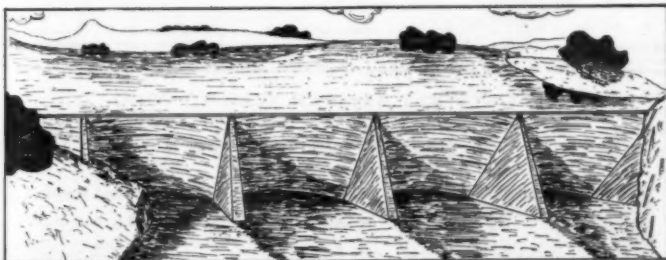
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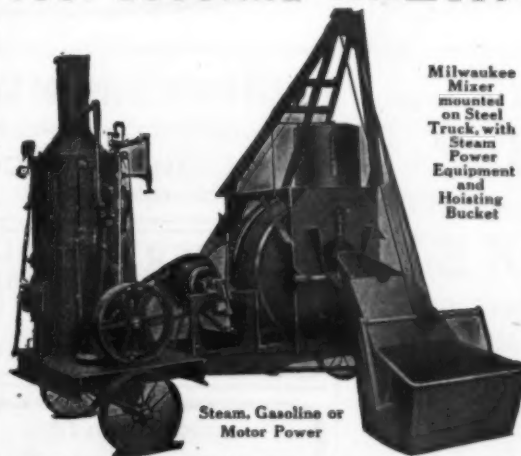
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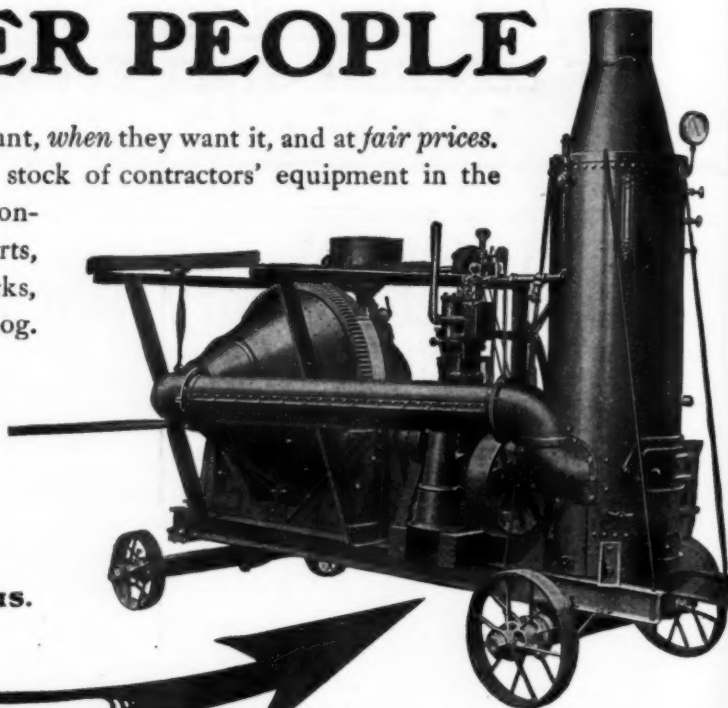
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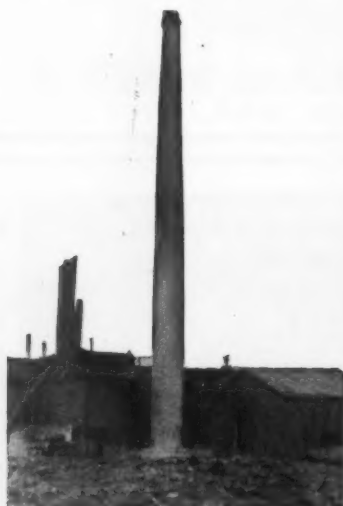
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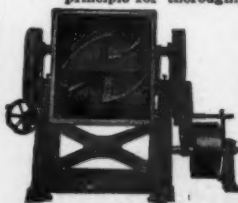
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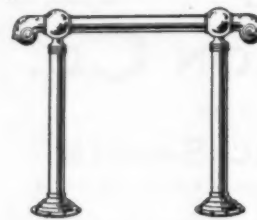
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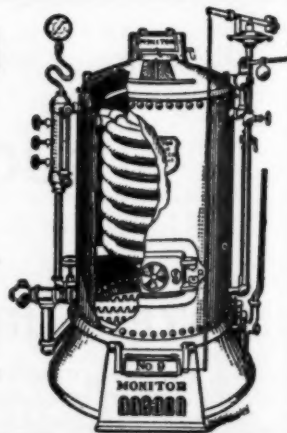
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
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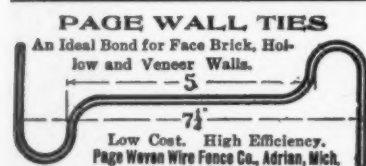
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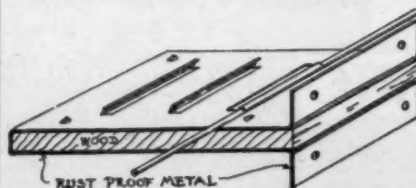
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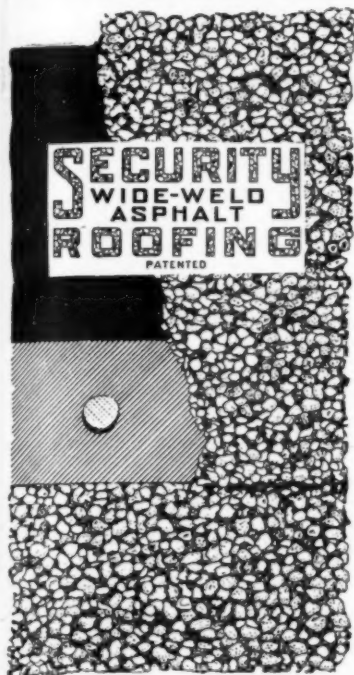
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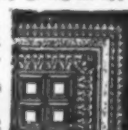
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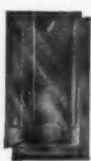
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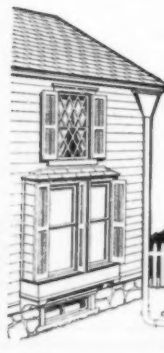
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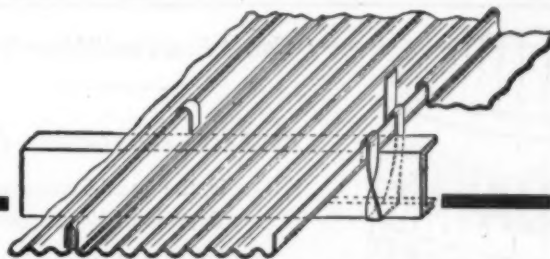
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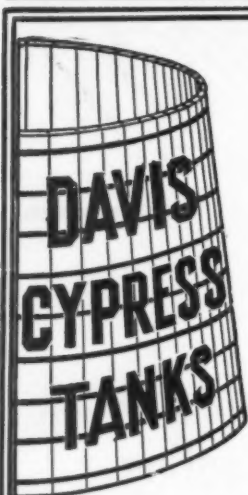
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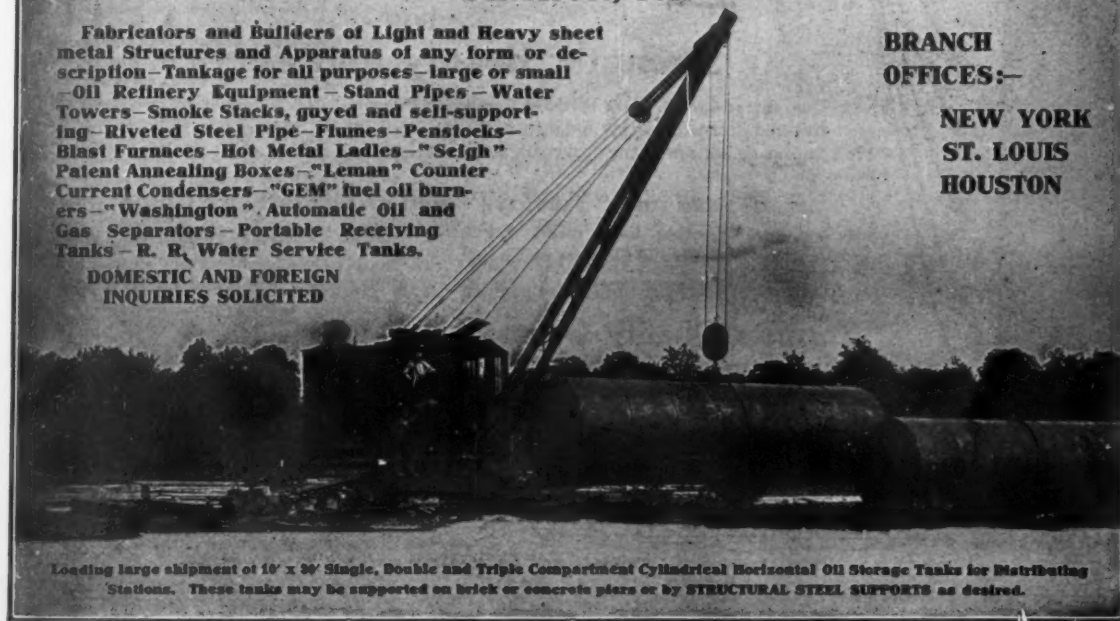
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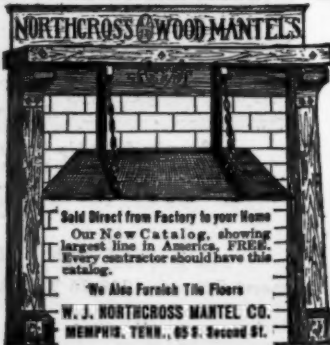


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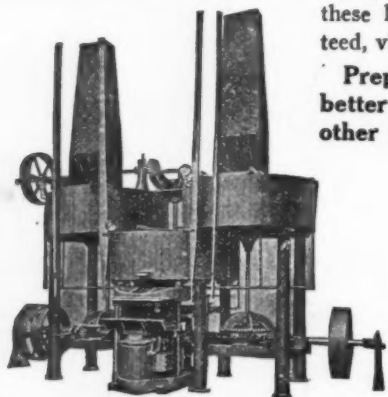
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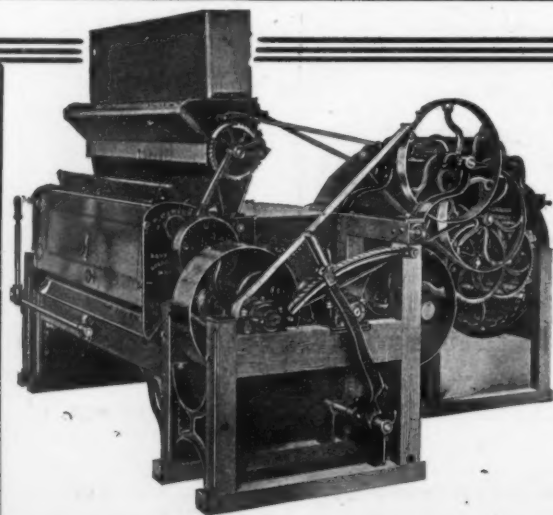
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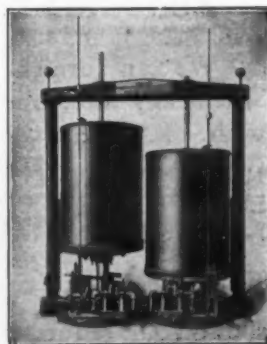
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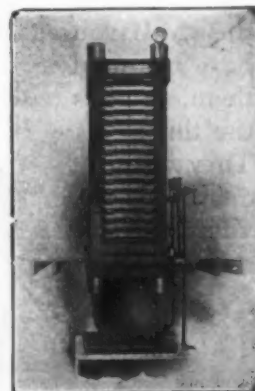
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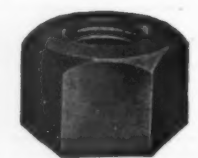
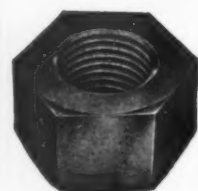
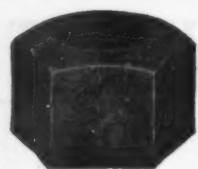
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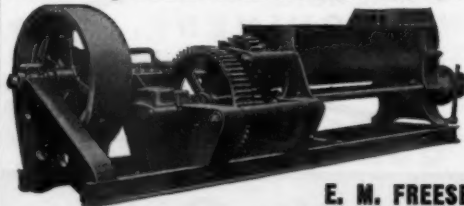
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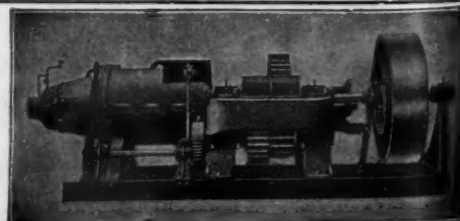
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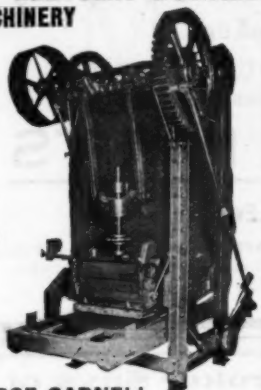
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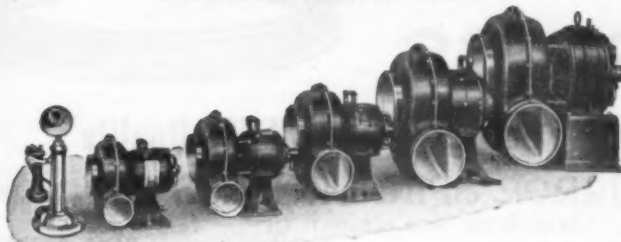
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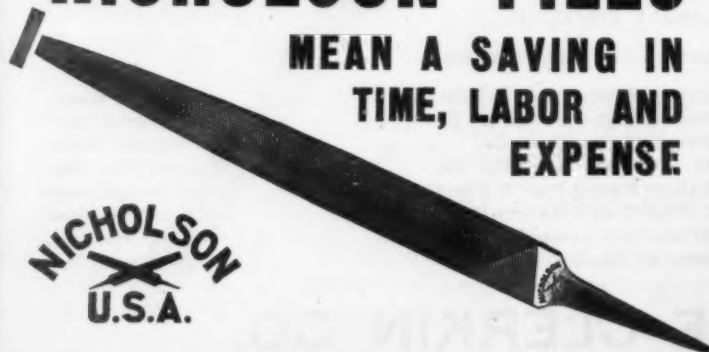
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At the International Municipal Congress, Chicago, Sept. 29th, Edward F. Croker, Ex-Chief of New York City's Fire Dept., said:

"To me there is a fascination about steel interiors. It constantly emphasizes the absurdity of fire-fighting, for how can fires rage if they have nothing to feed upon?"

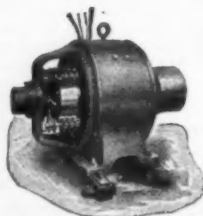
Interviewed, Ex-Fire Chief Croker said: "You are at perfect liberty to use my talk partially or entirely and apply it to your products. I have watched your development since you first originated cold drawn steel interiors with great interest. My address and the fact that my residence will be equipped with The Dahlstrom Products is as strong a recommendation as I can make."

Copies of Ex-Chief Croker's address may be had for the asking. Complete literature upon request.

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MANUFACTURERS RECORD

A WEEKLY SOUTHERN INDUSTRIAL, RAILROAD AND FINANCIAL NEWSPAPER

Trade-Name Registered in the U. S. Patent Office

VOL. LXL. No. 2.
WEEKLY.

BALTIMORE, JANUARY 18, 1912

\$4.00 A YEAR.
SINGLE COPIES, 15 CENTS.

Manufacturers Record.

PUBLISHED EVERY THURSDAY BY THE
MANUFACTURERS RECORD PUBLISHING CO.,
BALTIMORE.

RICHARD H. EDMONDS, President.
FRANK GOULD, Vice-President.
VICTOR H. POWER, Treasurer.
I. S. FIELD, Secretary.

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Branch Offices:

New York—52 Broadway.
Boston—643 Old South Building.
Chicago—1116 Fisher Building.
St. Louis—543 Century Building.

Subscription, - - - - - \$4 a year
(payable in advance) to United States,
Mexico, Cuba, Porto Rico, Hawaii and
the Philippines.

To Foreign Countries (including Canada) in
the Postal Union, \$6.50 a year.

[Entered at the Baltimore Postoffice as sec-
ond-class matter.]

BALTIMORE, JANUARY 18, 1912.

THE IMPORTANCE OF COTTON IN COMMERCE.

The importance of cotton in the foreign commerce of the United States, which has frequently been referred to by the MANUFACTURERS RECORD, is emphasized by the fact that in the calendar year 1911 the value of cotton exported was less than that in the preceding 12 months. That has happened before, but the decrease of \$14,129,859 in the value of cotton exported, from \$530,059,979 in 1910 to \$515,930,120, occurred in spite of an increase of \$20,404,845 pounds, from 3,639,506,366 to 4,459,911,211 pounds of cotton exported. Several times in recent years the increase in the value of cotton exports has been responsible for an aggregate increase in the value of five of the leading groups of exports, but the 1911 situation as compared with that of 1910 is shown in the following table;

Articles.	1910.	1911.
Cotton.....	\$530,059,979	\$515,930,120
Meat and dairy.....	107,933,379	136,630,390
Breadstuffs.....	95,703,988	122,836,878
Mineral oils.....	88,567,119	98,936,795
Cattle, hogs, etc.....	9,090,029	14,289,509
Total.....	\$831,354,494	\$888,623,692

Of the five groups whose aggregate value represents about 40 per cent. of the value of all merchandise exports cotton alone showed a decrease in 1911 under 1910. The big increase was \$28,097,011 in meat and dairy products, from \$107,933,379 to \$136,630,390; breadstuffs had an increase of \$27,132,890, from \$95,703,988 to \$122,836,878; cattle, hogs and sheep, \$5,199,480, from \$9,090,029 to \$14,289,509, and mineral oils, \$10,369,676, from \$88,567,119 to \$98,936,795. As to quantities, there were increases of 22,500,000 bushels in corn, 9,000,000 bushels in wheat, 3,800,000 barrels in flour, 70,000,000 pounds

in bacon, 57,000,000 pounds in hams and shoulders, 6,000,000 pounds in pork, 177,000,000 pounds in lard, 163,000,000 gallons of illuminating oil, 18,000,000 gallons of lubricating oil and 3,000,000 gallons of crude mineral oil. The decrease in the value of exports of raw cotton of \$14,129,859, with the increase of 820,404,845 pounds in the quantity exported, marks the difference of something like 3.2 cents per pound between 14.5 cents and 11.3 cents in the export prices of the cotton, and it must be remembered that the decrease would have been greater had it not been for the higher prices in the earlier half of 1911. So it is not only the cotton growers who are affected seriously by a fall in the price of the staple, not only the merchants and the bankers with whom the growers come into immediate contact, not merely the South as a whole feeling the difference between \$1,030,000,000 received for a 12,120,000-bale crop of cotton and the seed and \$875,000,000 for a 15,000,000-bale crop, which, of course, has its influence upon merchants and manufacturers in the rest of the country having dealings with the South and upon lumbermen and mining interests, but it has its marked effect upon the balance of trade of this country with other lands.

THE APPALACHIAN FOREST RE- SERVE.

The great forest reserve in the Southern Appalachians, protecting watersheds of some of the most important navigable streams of the United States, begins to take definite shape in the announcement from Washington that officials there are drawing up contracts for the purchase of 160,000 acres of land, mostly in Virginia, Tennessee, North Carolina and Georgia, and that the next purchase will be of lands in West Virginia. These purchases are being made under the terms of the Weeks law enacted by the United States Congress, the general purpose of which is to assure the maintenance of a perpetual growth of trees on the slopes of the Southern highlands and also in the White Mountains of New England for the protection of the head-springs of rivers that are to become more and more important in the internal commerce of the country and for the prevention of erosion of lands tending to fill up the beds of the streams. Worked out in accordance with the broad purpose of the advocates of the Appalachian Forest Reserve, the plan will give the people of the country great stretches of forest to be protected from fire by rangers and to be handled in lumbering operations, so as to produce some income, but principally to permit young timber to attain its proper growth. Handling of this national forest by the Government experts is bound to be a tremendous object-lesson for the interests engaged in commercial lumbering, and it ought to bring about conditions of lumbering that will preserve the timber growths of the South as a

perpetual source of wealth, not unlike the cotton crop or grain crops, instead of treating them as of the character of a coal mine or other mineral deposit where absolute exhaustion must come ultimately.

In time other benefits will accrue from this great undertaking. The same policy which will result in the maintenance of the steady flow of streams, especially if reservoirs be constructed at proper locations, will also reduce to a minimum the loss of life and of property by devastating floods, thus advantaging manufacturing industries, as well as agriculture, and may be made a factor in the thorough utilization of the water-powers in hydro-electric development for light and power.

It is apparent, therefore, that owners of land selected for the Appalachian forest reserve are really among the persons least interested in the consummation of the plan, and that the money spent in the purchase is of small amount compared with the value of the material good to be accomplished. One period of flood in the regions washed by streams rising in the Appalachians can bring about a loss representing in dollars and cents more than the full amount required to purchase the territory for the Appalachian reserve, and farmers, manufacturers, lumbermen, transportation interests and business men generally are directly concerned in the project being carried out in all its perfected details.

TEXAS IRON-ORE POSSIBILITIES.

A keen and qualified observer, well acquainted with the basic facts in iron-making, writes to the MANUFACTURERS RECORD regarding the iron-ore situation in Texas as follows:

Recently I have read several articles bearing on the Texas ore situation, some setting forth the quality of the ore and predicting its future bearing on the Southern iron and steel industry, others sounding a note of skepticism. I have seen the Texas ore fields, and to me they are very attractive. The ore is very rich in metallic iron, running as high as 60 per cent., and it comes nearer being uniformly low in phosphorus than any brown ore extensively mined in the South. Even in the pig the phosphorus is only a few points above the Bessemer specification. Aside from a steam-shovel proposition in the mining of the ore, the scraper process could be advantageously used, thus eliminating certain high costs incident to steam-shovel mining. As to the use of this ore in a furnace, it is a fact that numerous failures have been made in Texas in the manufacture of pig-iron at a profit, but these were not in any way attributable to the quality of the ore. Probably to a certain extent politics have been detrimental to the successful operation of the furnace plants in Texas in the way of politicians placing at their head inexperienced men, or at least not men with an "eye to cost." This, of course, had its bearing on the situation, but above all these failures were due to lack of cheap fuel. The furnaces had to depend on their coke supply from Virginia, Tennessee and Alabama, and, aside from the uncertainty on account of distance, the cost of the coke laid down at, say, Rusk was \$5.75 to \$6.25 per ton. This meant a cost of \$11.50 to \$12.50 alone for the coke. Under present conditions, with the exercise of the strictest economy and practical and efficient management, it would cost

at least \$14 to \$14.50 per ton to produce iron at Rusk.

The question of iron-making in Texas depends wholly on the solution of the fuel problem. I should not be surprised some day to hear of a good coking coal being found reasonably near if not in the ore district of the State of Texas. To my mind the abundance of lignite and low-grade coal indicates that there should be some "ripe" coal in the State. If not, then there is another alternative. That is: If the railroads will haul the ore to a convenient point on the Texas coast for \$1 per ton, and it can be mined and put on cars at \$1 a ton, and if a satisfactory furnace coke can be laid down in Texas by water at \$3.50 per ton, which is not impossible, then iron should be made in that section at a cost dangerously near Birmingham's. Therefore, after all, the Texas ore situation is not to be laughed at or made light of. The quantity and quality are there.

These observations coincide with the optimism of Dr. William B. Phillips, director of the bureau of economic geology and technology at the University of Texas. Discussing not long ago the brown ores in the districts in Eastern and Northeastern Texas, occupying about 17,000 square miles, Dr. Phillips said:

These ores are exceptionally adapted for the manufacture of basic pig, carrying from 0.10 to 0.25 per cent. of phosphorus, and they exist in such quantities as strain the imagination. I have knowledge of 800 pits, trenches, etc., that were made on one property of 50,000 acres in East Texas, and not one of them failed to show workable ore. This ore carries more than 50 per cent. of iron, and can be mined, washed (when necessary) and loaded for 85 cents to \$1 a ton. Shipments of this ore to the Birmingham district, about 45 cars, showed more than 57 per cent. of iron, with phosphorus from 0.10 to 0.15 per cent. The shipment of about 600 tons that went to Philadelphia in June, 1910, showed more than 57 per cent. of iron, and the phosphorus was not above 0.20 per cent. in any of it.

One of the main facts to be kept in mind, especially in view of impressions in some quarters that the supply of iron ores in the South is limited, is the presence in Texas of vast quantities of ore rich in metallic iron and mined with comparative ease. Whether or not suitable coking coal shall be uncovered within easy reach of the ore fields, or whether the alternative of tidewater smelting of Texan ores with water-borne coke from other States shall be the form that the Texan iron industry shall assume, there is little doubt that Texan ore is bound to play an important part in the iron and steel industry of the country.

COTTON POSSIBILITIES.

John Kasmeler raised on an upland farm a mile west of Shawnee, Okla., in the past season, in addition to Irish and sweet potatoes, tomatoes, kafir corn, etc., 2000 pounds of seed cotton, averaging 784 pounds of lint, to the acre. In a growing contest Charles M. Brandon, a boy of Checotah, in the same State, raised 2869 pounds of seed cotton on an acre, yielding 786 pounds of lint. This cotton was worth at prevailing prices \$72.71 for the lint and \$16.52 for the seed, a total of \$89.23, from a single acre of land. The *Daily Oklahoman* of

Oklahoma City, which publishes these records, argues that if all the cotton growers in Oklahoma had raised in 1911 as much per acre as the boy on his one acre, the cotton crop of the State would have been worth \$220,000,000 instead of \$50,000,000. The calculation is interesting from other than a theoretical standpoint. It may not be possible for a man with 100 acres in cotton to give as careful attention to the culture of his crop as a boy with one acre, spurred on by the offer of a prize, in addition to the money received for his more than a bale and a half. But that one acre of land could be brought to bear a crop of that size is proof that 100 acres may be made to produce a larger crop than 40 or 60 bales, and that, seasonal conditions being favorable, 33,000,000 acres in the South may be made to produce more than 15,000,000 bales of cotton. But there would be more profit to the growers in raising 15,000,000 bales on 15,000,000 acres, employing the other 18,000,000 acres for the growing of other crops. The experience of the Oklahoma boy emphasizes the value of making the most of every acre of land in farming instead of sprawling efforts over a large acreage.

PLAIN FACTS AS TO IMMIGRATION TO THE SOUTH.

Secretary R. C. Cool of the Chamber of Commerce of Southport, N. C., has submitted to the MANUFACTURERS RECORD some views on the subject of immigration as affecting the South. His article embodies a number of opinions and impressions calculated to divert attention from the position taken by the MANUFACTURERS RECORD on the subject. We are, however, reproducing it as a text for an emphasis of the points to be borne in mind in inducing immigration to the South. Secretary Cool writes:

This is not written with an idea of starting an argument with the Editor, or with the various Governors who have recently written on the question of immigration.

This question of immigration as affecting the South today is such a broad one, so urgent and of such national and world-wide importance that a great many different views can be held on the subject and still all be correct and logical. There are many sides to the question, and it may make some difference whether we look at it from a political, selfish, industrial, moral, religious, humanitarian, or any viewpoint we may take. A restricted locality, such as a county, is justified in taking a narrow view of this subject, but for the South as a whole nothing will answer or meet the requirements but the very broadest of views. If we of the South are even to begin to realize what the development of the South means, and are going to endeavor to contribute our mite in advancing the cause, we must lay aside all personal reasons and go at the subject without too many and too minute reservations. Various estimates place the uncultivated land in the South at from 300,000,000 to 450,000,000 acres. At a low estimate, considering natural conditions, these uncultivated lands would support 20,000,000 people. The lands now under cultivation, if properly handled and worked to one-half capacity, would support another 10,000,000 people more than at present. If our resources in timber, minerals, water-powers, harbors, navigable streams, climate, and so on down the list, are anywhere near what we estimate them to be, there is easily room for another 20,000,000 people in transforming our natural resources and farm produce into finished products and transporting them to the world markets. Seventy million people, or 20,000,000 families, have jobs waiting for them in the South.

It has been estimated that every new, industrious family moving into a section is worth \$1000 to that section. If this is true, we have a \$20,000,000,000 contract on our hands. The estimate of 70,000,000 people needed may seem high, but if we ever do acquire them we will then only have one-fifth the average population of Belgium, with greater resources per average mile than she has, and with more favorable climate. There seems no question but that the South

today is only fairly well started on the larger development that is bound to come. Development is taking place and new industries are being started at an increasing ratio each year, and it is only a question of a few years before the need of men will be much more acute than now. We have got to have more men, and we have got to have them in large numbers, and soon. We can consistently ask only one question of each of these men we need: Will he work? There is a place in the South for every man that will work, no matter what his nationality.

There is a tendency to speak and think slightly of immigrants from some parts of Europe; I mean the Italians, Russians, Greeks, and Southern Europeans in general. Nearly always these are excluded from the lists of desirables. This prejudice may in some cases be well founded, but we are so badly in need of men that will work that it is not wise to draw the line unless there is amply good reason for it. There are, of course, poor Italians, Greeks, Portuguese, etc., but there are also poor North Carolinians and Virginians. No section has a monopoly on shiftless, good-for-nothing people. The fact that these folks have come to this country with no intention but to work, and work hard, clearly puts them in a class above the average Southern laborer, black or white. As a rule, they have far better schools, roads and improvements at home than we can offer them here, and are used to a higher degree of education than we have in the South. If these people can be induced to come and locate in the South there is practically no danger of their lowering the standard of living, and an awfully good chance of their raising it. It is true they will live like cattle and save to gain their ends, but it is not because they are shiftless that they do it, nor will they put up with such living for long, as do some of our people of the same class. These same despised Europeans have proven to be far more anxious to educate their children than are many of our native people. They will make a living and grow rich, where our negroes and poor whites would starve to death. It is born in them, and they have the training to make lots out of little.

They will do more with land and crops, especially fruit, than we can even dream of doing. Where these people have been put into colonies they have made a success in every instance I have heard of, and the report is usually that they are teaching our people in these localities how to do things. They make good citizens when they locate on the land, and very quickly take the initiative in improvements, schools and roads especially. There are bad ones among them, but the proportion is apt to be less than we have at home.

The massing together of them in the cities is a different proposition from having them on the land, but isn't it significant that in most of the larger cities of the North the foreign-born population is from one-third to three-fourths of the whole? It is barely possible that the fact that these foreigners are there is directly or indirectly responsible for the young men of the South going to these cities. Surely these cities would be different places industrially if the foreigners were taken from them. Inversely, it is not only possible, but quite probable, that the reason the South has lost and is losing so many of her young men is because we have not more of these same foreigners who are now trying to exclude. It is labor rather than capital that makes a section prosperous.

We, of course, want every good farmer from the North and West that we can induce to come here. We can use every immigrant coming to this country from Northern Europe for many years to come, but we can also use every man who is willing to work six days a week the year through, no matter from what country he comes. We can not afford to turn down any man who is willing to work and is frugal, and we need not fear the morals, integrity or ultimate worth of a man who has these two traits.

When the world learns, and it is learning, what chances the South offers for labor and investment there will be no stemming the tide of people coming here. They are coming from every part of the world, and each one will find a place where he is needed and work to do. Our job is to pull together and let the world know all that the South has to offer. We can take care of and use every frugal workman that we can induce to come, and we are wasting time when trying to decide whom to invite and whom to exclude. In the meantime other sections are getting the men we need.

This article has been tendered the MANUFACTURERS RECORD for publication in sequence to recent discussions in our columns which have appeared, as read-

ers are aware, not in opposition to immigration to the South, but in opposition to attempts to place in the South undesirable foreigners coming directly from abroad or by way of relieving the congestion of them in such centers as New York city. These attempts, however superficially they have been disguised as they have come to the surface, have been persistently maintained for more than 10 years, changing their form, but not their substance, and engineered directly or indirectly by alien influences having no interest in the welfare of the South. The country would be amazed could it become acquainted with all the facts of the shifting and the dovetailing of these influences and of the methods employed to obtain for them the endorsement of representative Southerners or other Americans interested in the South and to use the desire of the South for a right kind of immigration as a cover for reconciling the South to any kind of immigration. It is significant that these attempts have been most pronounced at the times when in other parts of the country there have developed movements against the evils resulting from the immigration of the past decade.

The MANUFACTURERS RECORD does not share the pessimistic views of the secretary of the Southport Chamber of Commerce as to the character of the average Southern laborer in comparison with that of the mass of Southern Europeans who have been flooding into this country by the wholesale, nor does its opposition to the class of aliens who have in recent years dominated in the immigration movement to this country—the class from Italy, Russia, Greece or other Southern European countries—mean that it is opposed to the settlement in the South of the right sort of Italian, the right sort of Russian or the right sort of Greek. But it regards as among the wrong sort of such foreigners those who come to this country with no intention of identifying themselves and their children with the whole spirit that has made this country great, those who propose to live off the country instead of for it, while improving their own condition, and those who intend to take the cue as to their attitude toward public affairs in this country from alien sources, whether acting directly from abroad or through agencies in this country. The record of Southern progress in the past 25 years, or even in the past 10 years, in comparison with the record of the progress in the rest of the country, which has been made the home of more than 3,000,000 newcomers from abroad, is enough to check any well-informed person from comparing Southern laboring men with the mass of latter-day immigrants.

Still, with all its progress, the South needs more men who will engage in productive labor. The bulk of recent foreign immigration to this country has tended to engage in labor which may be called the labor of the middleman, which in the main adds to the labor of actual producers. Among this foreign immigration have been many persons of the farming class in their native countries, but their course of action after reaching this country clearly indicates their intention not to farm in this country. So the suggestion of the vast area of uncultivated land in the South has no bearing upon the question of this class of immigrants.

It is a fact, and the leading fact, and not a mere matter of "of course," that the South wants every good farmer from the North and West, and every good immigrant coming not merely

from Northern Europe, but from any country of Europe. But the surest way for the South to check the coming of such settlers is to permit itself to become the victim of the divers and devious general Southern immigration schemes that, as things appear now, would in a few years repeat in the South the anarchy of the recent days at Lawrence, Mass., with speeches by the agitators in Italian, Lithuanian, Polish, Syrian and other tongues, or the conditions which have made New York's East Side a great melting pot of violence and vice.

The South wants hundreds of thousands and millions more men. But in measures for its development, especially in the case of permanent immigration it will be wise in making haste slowly and in subordinating quantity to quality, and particularly in seeing to it that immigration shall not result in the creation of any large groups of people within the State without being of the State, deriving, in their ignorance of the English tongue, all of their inspiration as to civic conduct from leaders holding their position by virtue of the ignorance of their followers, and not hesitating to use that position improperly in politics as affecting even Presidential aspirations.

The best means to assure the right kind of immigration for the South is to limit governmental activities in the movement to State authorities acting under no "co-operative" auspices of a sectional or national assumption beyond the range of the close observation of the people of the State absolutely essential to their well-being.

AN ENCYCLOPEDIA OF SOUTHERN FACTS.

Basing your conclusions on what the MANUFACTURERS RECORD has published about "Thirty Years of Southern Upbuilding," to be issued on its thirtieth anniversary, February 22, you are doubtless expecting a publication invaluable to business men, manufacturers, merchants, bankers, engineers, geologists and men of all professions. You will not be disappointed. The special articles which have been written for this issue, and the statistics which it will contain, will make it for all time to come the great storehouse of information about the South. From it you will be able to gather more knowledge about the South, its resources, its progress, its future, than from any other treatment of the subject. As strong as this statement is, the articles now in hand fully justify it.

Do you want to have before you a broad bird's-eye view of what the South has, of what it has done and what it is destined to accomplish in manufactures, in agriculture, in railroad operation, in coal and iron and cotton, in oil and gas, in phosphate, in road improvement, in granites, marbles and other building stones, in the possibilities of chemical industry and the utilization of waste products? In these and in many other things, "Thirty Years of Southern Upbuilding" will in effect be an encyclopedia covering the South.

To every man of affairs, to every man in public life, to students of economic conditions, to public and private libraries, to colleges and universities, "Thirty Years of Southern Upbuilding" will afford the opportunity for a liberal education about the South. No speech on the South can henceforth be made and no article be written on that subject without falling short of the opportunity unless it draws upon this encyclopedia of the South for facts and figures.

Draining Florida Everglades and Results Expected.

[Special Correspondence Manufacturers Record.]

Fort Lauderdale, Fla., January 13.

The Everglades of Florida have been the subject of romance, the theme of song and story, the supposed hiding place of all sorts of bad men, and withal the most misunderstood portion of this great country for many years. Now they are the scene of one of the most gigantic plans of land reclamation ever undertaken in the world, for they are, by a large and comprehensive system of drainage and irrigation combined, to be redeemed from their natural state of wildness and made productive of those things that go to make up the

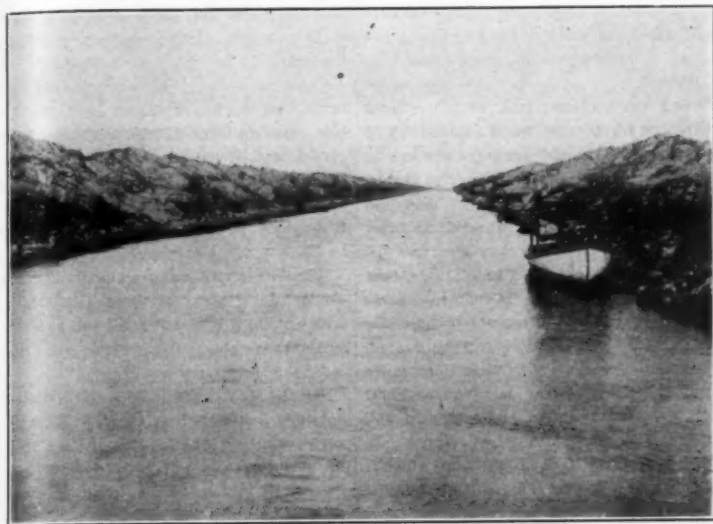
for use of any kind, and that it grows from soil whose surface is covered with water, though in most places not to any considerable depth. Here and there arises a sort of island, or "hammock," in local phraseology, covered with pine trees. These "hammocks" are for the most part but a few inches higher than the surrounding land, having been formed possibly by a growth of vegetation a little more rank than the average, among which the seeds of the trees have fallen and taken root. But in many places the eye searches from horizon to horizon without seeing

anything but the dead level of what appears to be a submerged prairie.

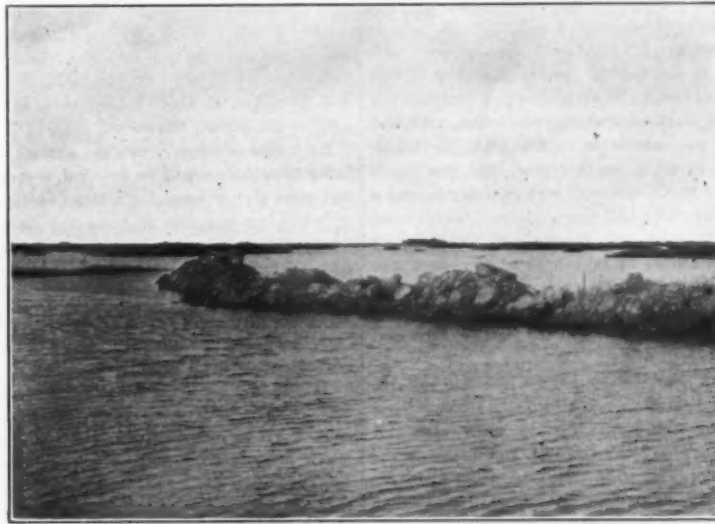
The area of the Everglades is about 4,000,000 acres, an amount of land not to be treated lightly in view of the back to the soil movement that threatens to send all the people in the cities looking for farms and truck patches. The 'Glades proper begin at Lake Okeechobee, a body of fresh water only exceeded in size by Lake Michigan, of all that lie wholly within the United States, and the eastern side of which is some 35 miles from the Atlantic coast at Palm Beach. From this lake they stretch southward something over 100 miles to the lower end of the peninsula, though with an eastward trend that brings them to within a short distance—two or three miles—of Biscayne Bay at Miami. The 'Glades are formed by a sort of basin shape in the coralline

rock that forms the Florida peninsula, being turned up at the edges like a meat platter. The rim of the platter is cut through at intervals by streams of more or less importance, but these are not of sufficient frequency to carry off all the water, and so the moisture stays there.

How to drain this immense body of land and render it useful for agricultural purposes is a problem that has long been under consideration. So far back as the year 1847 the Secretary of the Treasury of the United States, acting under a resolution of Congress, appointed Buckingham Smith, a well-known engineer of San Augustine, to procure "authentic information in relation to what are generally called the 'Ever Glades' on the Peninsula of Florida, for the purpose of ascertaining the practicability and expediency of draining them." A number of surveys have



A LONG STRETCH OF ONE OF THE CANALS FOR THE DRAINAGE OF THE EVERGLADES.



UPPER END OF CANAL SHOWING EXPANSES OF WATER THAT WILL BE CARRIED OFF.



A PACKING STATION ON THE CANAL WHERE PRODUCTS ARE LOADED FOR MARKET.



VIEW OF THE DOCKS AT FORT LAUDERDALE WHERE EVERGLADES PRODUCTS ARE SHIPPED.

luxury of modern life and add to the pleasure of human existence.

In the first place it may be well to state, for the information of those who harbor the wrong impression of the physical character of the great body of land composing the Everglades, that they are not composed of wild, impassable jungles, with trees and undergrowth of various kinds so closely intermingled as to make them practically impenetrable. The Everglades present an appearance much like a wide expanse of Western prairies, covered with a luxuriant growth of grass, and stretch farther than the eye can see, smooth, level, and in seeming readiness for the plowshare, with here and there a small lake from which the sun's rays glance. Upon closer inspection it is seen that the grass is of a very coarse fiber, rendering it unfit



BIG DREDGE CUTTING ITS OWN WATERWAY.

been made by others, and each one, from Buckingham Smith down, so far as I have been able to learn, has reported that it was both practicable and expedient to drain the Everglades. In 1850 Congress passed what was known as the "Swamp and Overflowed Land Grant Act," under which the Everglades became the property of the State of Florida, instead of the General Government.

From that time on the matter of draining the Everglades has been an ever-recurring question in the politics of Florida, one of those things that prove of potency in helping candidates acquire office, only to be dropped as soon as the office is acquired. In 1881 Hamilton Disston, the saw maker of Philadelphia, secured a contract with the State under which he undertook to drain a large area, in consideration

of which he was to receive an acre for each 25 cents expended by him in drainage work. Disston formed a company and did a lot of work, but finally his proposition fell through, and the matter came to a standstill again.

In 1901 W. S. Jennings became Governor of Florida, and he construed the law to mean that he must drain and reclaim the Everglades. He set matters moving, but before they had moved far his term expired and N. B. Broward became Governor. Broward entertained the same view held by Jennings, and as there was opposition of a legal as well as a political kind he employed Jennings as an attorney for the State to meet and surmount the objections. A law drafted by Jennings was enacted, forming a drainage district and levying a tax of five cents an acre per annum on the lands in that district, and after a whirl in the courts, where it was found unconstitutional, it was amended so as to stand the test, and is now the law. A million or so acres was sold, and with the money thus secured and that coming in by way of the drainage tax the work of drainage was begun. At first it was carried on by the State itself, but, as in many another case, that was found the most expensive way of doing it, and a year and a half ago a contract was entered into with the Furst-Clark Company of Baltimore to take hold of the work and complete it. This it has obligated itself to do by July 1, 1913, and I will be greatly surprised if it fails to finish it by that time.

I have not sought to give here all the various steps taken in this matter, because they would take up too much space. I have simply touched the high places in the record, with the idea to show that the drainage proposition was always at hand, ready to be sprung in some form or other, and was most usually sprung.

Now the drainage of a tract of land some 80 miles square is not a mere matter of deciding that it must be done and then sending out a few hired men with picks and shovels to do it. Such an undertaking presents a number of difficulties at best, and in this case it was beset by more than the usual tale. The surface of the Everglades lies but a few feet above the level of the ocean, and the question that presented itself to the engineers charged with the task of working out a plan of drainage was whether canals dug through them to the ocean would have sufficient fall to carry off the water. Topographical surveys showed that the surface of Lake Okeechobee was about 20 feet above the ocean, which was thought to give sufficient fall. The question, then, was whether a reasonable number of canals would carry off the water. And right here entered another factor into the equation. Lake Okeechobee catches the water from a large area of land to the north, carried into it by the Kissimmee River and a number of other smaller streams, and sufficient drainage room must be provided for the overflow from these streams, as well as for the water falling over the Everglades themselves.

Not only that. The soil of the Everglades is a black muck, formed by the decay of vegetable matter, the product of a few centuries, more or less, of saw grass and other kinds of weeds and grasses that have grown up and died and decayed. This soil is so loose and soft that it dries out easily, and its susceptibility to drought would make it of doubtful value for cropping purposes. It must, therefore, be rendered dry, but not too dry. And moreover, being of this vegetable formation, it is peat, and peat burns so readily that if this Everglade land became too dry it would be liable any time to catch fire and burn up. No man could feel assured when

he went to bed during the dry season that he would wake up and find the surface of his farm doing business. There are places in this country where successive fires have burned away about all the productive land the farmers have. Not in Florida, but in other States where black muck forms the producing surface.

Lake Okeechobee, thought at first to be the most dangerous feature of the whole Everglade proposition, was figured out finally as furnishing the solution of both these difficulties—the catch-basin for the overflow from the north in time of flood, the reservoir from which to irrigate the dry lands in time of drought.

The plan of drainage now being worked out provides for four main canals, three from Lake Okeechobee southeast, with one of these splitting in two at the far end, and one to the southwest. This last named is now completed from the lake to the Caloosahatchie River, which carries its water to the Gulf. Of those running southeast, one empties into the Hillsborough River and two into the New River, and from one of these latter the branch goes to the Miami River.

By means of these canals the surface of Lake Okeechobee will be lowered several feet thus giving room for a large amount of water to run into it from the north during the wet season, where it will be impounded by locks closing the canals at their junction with the lake. When the water that falls over the Everglades has been carried away, and as needed for irrigation purposes throughout the dry season the locks will be opened and the stored water sent out through the canals to feed the thirsty crops and make its way to the ocean before the setting in of the next rainy season. Lake Okeechobee has about one-sixth the area of the territory that drains into it, so that for every foot its surface is lowered two inches of water from the greater surface can be caught and held, kept from doing damage when it threatens and made to answer a useful purpose in time of need.

The canals now being dug are in length as follows: Hillsborough, 46.50 miles; North New River, 57.65 miles; South New River, 70.80 miles; Miami, connecting with South New River, 28.50 miles; a total of 203.45 miles. When the contract was let to the Furst-Clark Company the State had dug a total of 29.12 miles, and since taking up the work the Furst-Clark Company has dug something like 80 miles. The company has nine big dredges at work now, and is making more rapid progress than heretofore, so that there seems no doubt of its ability to complete the work in the time fixed by the contract.

There are other canals to be dug before the work is done. One of these has been tentatively located from the extreme southern end of Lake Okeechobee to the extreme southwestern end of the peninsula. Another has been located from the eastern side of the lake due east to Lake Worth, near Palm Beach, which is but 35 miles away. In addition contracts have been made for cleaning out, deepening and widening a number of natural waterways to help the canals do their work. The canals are 60 feet wide and from 8 to 10 feet deep.

To complete the necessary drainage lateral canals must be dug, but a good deal of this work will be done by the owners of the land instead of by the State. Some of the companies that have secured large bodies of the 'Glade lands have already dug lateral ditches through portions of their holdings, and are actively engaged in extending them. On one body of land which I visited on the South New River Canal the company owning it is digging at every half mile two ditches and throwing up a road between from the main canal

to its boundary line, and a single ditch a quarter mile from each of these. The land is laid off in lots reaching from the road and ditch to the single ditch, so that every piece will face on a ditch and a road and back up against a ditch. In this way each man will be sure of a good road to the big canal, as well as of ample drainage.

The black muck forming the soil of the Everglades runs from practically nothing at the outer edge of the platter-shaped basin to more than 20 feet in depth at the edge of Lake Okeechobee. It is underlaid by a marl in some places and by sand in others, both these resting on the rock that forms the base of the entire peninsula. I went as far up the South New River Canal as 16 miles from the rim, and there the muck had thickened to something like six feet.

There is still much discussion of the practicability of draining the Everglades, just as there is about every question that has formed the subject for years of political declarations pro and con. One Floridian you meet declares they can never be drained successfully, and that the land will be of little value when drained. The next will declare the drainage scheme to be the greatest piece of constructive statesmanship of which the State has ever had the benefit. It is not my intention to enter into this family quarrel. The fact is, however, and the proof is indubitable, that the current in the canals is such that dams have to be built at intervals to hold the water so that the dredges can be floated. One of these, some three or four miles from the Miami River, is seven or eight feet high, indicating a sufficiency of fall to carry off a great deal of water. In the South New River Canal, up which I traveled 16 miles in a motor boat, I found a pretty stiff current all the way. These canals are to have locks in them that will make them excellent public highways all the year round.

As for the soil, I saw as fine-looking crops of tomatoes, potatoes, beans, cabbage and various other kinds of truck as I ever saw anywhere. These were on first year land on the South New River Canal. On the Miami Canal a short distance from the river there is muck land that has been drained and under cultivation for a number of years. It produces fine truck crops, and its groves bring forth unsurpassed harvests of citrus fruits. On the west side of the 'Glades are orange and grape-fruit trees that have produced abundantly for years.

One of the Disston plans was to raise sugar-cane and make sugar from the drained lands. He drained some 1400 acres of saw-grass muck about Lake Tohopekaliga and put out extensive fields of cane, the product of which was ground and manufactured into a yellow clarified sugar at a sugar-house erected at St. Cloud. Prof. W. L. Van Dusen, a sugar expert who was connected with the enterprise for a number of years, has recently written that the yield was 63 tons of cane to the acre, and the analysis made by Government chemists showed that it ran 12 to 13 per cent. sucrose. This, he says, would give about 200 pounds of sugar to the ton, or 12,600 pounds to the acre. The business was badly managed and proved unsuccessful financially, and the sugar-house was dismantled a few years ago and the machinery shipped to Mexico. This, of course, served to give sugar-growing in the Everglades a black eye, but the matter is now being discussed again as a good business proposition, and those who have looked into it most closely expect the production of sugar to be one of the leading industries of these reclaimed lands.

A number of companies are engaged in exploiting Everglade lands, and some of these have done great injury to the Ever-

glades and to Florida by their reckless mode of doing business. They have made all kinds of misleading statements regarding the location of the lands sold and their condition with respect to immediate cultivation, and the consequence has been that purchasers have come here ready to go to work, only to find that they must wait months—possibly years in some instances—for the water to be drawn off their purchases. Other companies are representing conditions as they exist, and are earnestly carrying out their agreements with their customers, and these latter are satisfied and enthusiastic wherever found.

Possibly all the lands sold by any company will be worth in time all that is paid for them, but there should be no misrepresentation about the time when they will be available for agricultural purposes.

Nor should any man purchase land in Florida without knowing all about what he is getting. When the wily agent tries to make a sale without giving the purchaser a chance to see what he is buying it is enough to raise a presumption of bad faith, and the buyer should hesitate. Let him come to Florida and visit the Everglades, and if he finds that the land proposed to be sold him is worthless he will see thousands of acres of good land at reasonable prices, and he can buy what he likes.

The State still owns many hundreds of thousands of acres of these 'Glade lands, which it is proposed it shall sell to actual settlers at reasonable prices and upon favorable terms.

By the way, when it does sell its 'Glade holdings, estimated at close to 2,000,000 acres, what a tidy sum it will have to lay up at interest to help keep down the tax rate or to lay out in public improvements to help build up tax values.

GEO. BYRNE.

INVESTING IN SOUTH.

Western Apple Growers Interested Near Waynesboro, Va.

Mr. C. Louis Allen, president of the American Apple Co., Washington, D. C., in a letter to the MANUFACTURERS RECORD referring to the development of an apple orchard enterprise near Waynesboro, Va., says of his plan:

"Briefly, it is to combine the scientific methods used in the Northwest in the raising and marketing of fancy apples with the many natural advantages found in Virginia. Personally, I am a Northwest apple grower, today owning and operating the largest apple orchard in Montana, located at Lo Lo, in the Bitter Root Valley.

"Last spring we cleared and planted to the best varieties of fancy apple trees a tract containing 88 acres at Waynesboro. We are now working a crew of 50 men on a second tract at Waynesboro, adjoining the first, and will plant that this spring. All stumps and roots are grubbed, pulled out or blown out with dynamite, every hole for the young tree is dug by dynamite, and all work of every nature is performed in the most scientific, up-to-date manner.

"I am leaving this evening for Roanoke, where we expect to start a force of 75 men to work the following week. These men we shall likely import from Michigan."

To Manufacture Denatured Alcohol.

The Jefferson Manufacturing Co., H. O. Penick of New Orleans, vice-president, has been organized to manufacture alcohol, and wires the MANUFACTURERS RECORD as follows:

"Capital, \$250,000; mash capacity, 10,000 gallons daily; mill construction; cost \$110,000; blackstrap molasses for raw material; daily output, 8000 gallons proof spirits."

NEW HYDRO-ELECTRIC PLANT IN OPERATION NEAR ASHEVILLE.



NEW HYDRO-ELECTRIC PLANT OF NORTH CAROLINA ELECTRICAL POWER CO. ON FRENCH BROAD RIVER, NEAR ASHEVILLE.



SOUTHERN RAILWAY ROUNDING CURVE AT RETAINING WALL OF NORTH CAROLINA ELECTRICAL POWER CO., NEAR ASHEVILLE.

Board of Trade, Asheville, N. C., January 12.

Editor Manufacturers Record:

The third hydro-electric plant of the North Carolina Electrical Power Co. of Asheville, N. C., located on the French Broad River, 25 miles northwest of Asheville, which has been in the course of construction for the past two years, has just been completed and put into service. Normal capacity of plant, 5000 horse-power. The entire plant represents in round figures an expenditure of \$500,000, and to construct same it was necessary to raise and rebuild two and a half miles of the track of the Southern Railway, which skirts the river at this point. The track at the dam was raised 20 feet higher than the old roadbed; the total excavation amounted to about 60,000 cubic yards, 90 per cent. of which was solid granite. The change in roadbed alone cost \$75,000, required one year to complete, and all work was done without interference with traffic, there being operated over this line an average of 30 to 40 trains per day. The dam is 540 feet long, 30 feet high, 43 feet 9 inches thick at the base and 11 feet at the top. It is built of cyclopian concrete, the large stones in some instances approximating five cubic yards. Approximately 22,000 barrels of cement were used in construction of dam, foundation of power plant and retaining wall for protection of roadbed. The downstream face of the dam is curved in such a manner as to insure the water always clinging to the surface and preventing the formation of a vacuum under the falling sheet, since it is generally conceded by engineers that a vacuum on the downstream side is responsible for the trembling often felt in the vicinity of overfall dams. There are two 7-foot mud gates in the dam next to the power-house, which are operated by hydraulic cylinders and are opened and closed by an electrically-driven pump in the power-house. The gates and cylinders are entirely submerged. The four penstock gates are among the largest cast-iron gates made; each gate covers a clear opening of 18 feet by 7 feet 3 inches, and weighs 13 tons. They are operated in pairs by an electric motor. The power-house, 40x76 feet, fireproof throughout, is built of concrete to the floor line, and brick from that point up. Windows are of steel and prismatic glass. From floor to eaves is 31 feet; from bottom of foundation to comb of roof is 100 feet. A 50-ton electrically-operated traveling crane extends the entire length of the building.

The equipment consists of two 1875-kilowatt Westinghouse alternating-current generators, 6600 volts, 3-phase, 60-cycle, 133 revolutions per minute, each directly coupled to two turbines made by the I. P. Morris Company. The units are vertical, with the exciters located on top of the generators. The current, generated at 6600 volts, is stepped up to 66,000 volts for transmission. The entire control of the plant is from the switchboard, all gates, switches, motors and valves being electrically operated. Duplicate power lines have been built on private right of way, one on the west side and the other on the east side of the river, to plant No. 2 of this company, six miles northwest of Asheville, where there is a substation for distributing the power to Asheville, Canton and other places. The other two hydro-electric plants owned by this company develop 4000 horse-power, all of which has been utilized in Asheville. This new plant has been made necessary by the increased demand in Asheville and surrounding territory for additional light and power. This plant was designed by Charles E. Waddell, member American Society Civil Engineers, Asheville, N. C. Capt. W. T. Weaver is president of the company, and Charles Folsom is resident engineer.

N. BUCKNER, Secretary.

BIRMINGHAM IRON MARKET.

How the Sale of 35,000 Tons for Export Is Viewed.

[Special Cor. Manufacturers Record.]

Birmingham, Ala., January 15.

So far as prices are concerned, the local pig-iron situation is practically the same as for some weeks past. There has been a very material increase in the actual movement from furnace yards, which, taken with the recent reduction in the output, has to a certain extent affected the views of the selling interests, but the tonnage of foundry iron available at a basis of \$10 per ton Birmingham for No. 2 is no more definitely known, and it is quite certain that advances on certain favorable brands have not been maintained. Further report was made in the past week of sales at figures around \$10.50 per ton for No. 2 foundry, with lower grades sold at a differential of 50 cents per ton on that price. The consideration in such transactions, however, was small comparatively, and such sales cannot be considered a criterion of market values. The feature of the week was the confirmation of the sale of some 35,000 tons of foundry grades for export. This tonnage was booked for prompt shipment, and will require a significant part of the stock now on certain yards.

Of the tonnage mentioned, 10,000 tons are for American operators in Hull, England, which was sold at \$13.80 per gross ton delivered. The remainder is for requirement at Austrian points, and the price received is not given out. As is

always the case, the exportation of pig iron from this district is not looked upon as a good sign by those most conversant with conditions existing; yet the fact remains in this instance that the available supply will be reduced to a very appreciable extent without affecting the requirement of the regular trade, and it has been conceded that, with the present rate of production, the aggregate stock accumulation would vary but little unless the consumption in the natural territory increased very decidedly. It is pointed out that of the 15 furnaces now producing foundry iron, practically all are furnishing a daily output considerably larger than is considered their capacity, and that while the percentage of active capacity is comparatively small, the actual production compares very favorably with the production at times when the market was considered in a normal condition. Reports from the foundry trades continue to indicate satisfactory general conditions; especially is this true of the cast-iron-pipe industry, which industry consumes the bulk of the pig-iron tonnage produced in this district.

At the beginning of this week a very attractive volume of business in small lots for early shipment is pending. The demand for Nos. 2 soft and 2 foundry predominates, but the mill interests continue to buy such lots of low grades as are offered, and the price for such grades is largely governed by the accumulation on hand at the time inquiries are received. The sale of 500 tons of charcoal iron is just reported at figures in line with quo-

tations, and it is understood that an increase in the production of that grade will soon be made. The market for basic is without developments of especial interest. All grades for delivery in the first half of the year are quoted as below per gross ton f. o. b. cars here: No. 1 foundry, \$10.50; No. 2 foundry, \$10; No. 3 foundry, \$9.50; No. 4 foundry, \$9.25; gray forge, \$9; standard basic, \$10; standard charcoal iron, \$22.50.

Announcement is made that the American Cast Iron Pipe Co. of this city will furnish the water pipe required at Minneapolis, Minn., and at Muskogee, Okla., although the price at which those contracts were placed is not made public. A contract for some 3500 tons of water pipe for Macon, Ga., is now under consideration, and plans have just been completed for extension to gas mains at Albany, Ga., that will require some 2500 tons of gas pipe. The demand for maintenance work is fairly good, and the aggregate tonnage on order books at all plants in operation will still warrant 30 to 60 days' output without additions. Class "B," or water pipe is quoted as follows per net ton f. o. b. cars here, with Class "A," or gas pipe, quotable at \$1 per net ton higher, viz.: 4-inch to 6-inch, \$23; 8-inch to 12-inch, \$22; over 12-inch, average \$21, with special fittings quotable at from \$50 to \$55 per net ton at foundry.

The market for foundry coke is very active, and considerably more interest is manifested in furnace coke. A leading furnace operator is understood to be in

the market for a round tonnage of this last grade, but there is a disposition to buy on the open market rather than add to the active orders. The completion of the new retort ovens of the Tennessee Coal, Iron & Railroad Co., together with the by-product plant, will be effected within the next 30 days, and when in operation will have some effect on the market for foundry and furnace coke. Weather conditions in the past week materially decreased the output of steam coal, and considerable difficulty was experienced in the movement of such tonnage as was offered. The price for the best grades of run-of-mine coal has not been changed, and indications are that contracts for the current year will be entered at higher figures than were considered in the year just ended.

In the finished iron and steel market no transactions of unusual interest are reported. The advance in quotations on wire nails that became effective some weeks since is being maintained, and even the small mills are adhering closely to published quotations on round and bar iron and steel. Light rails are still quoted at \$1.35 per hundredweight for 12 to 40-pound sections, with eight-pound sections quoted at \$1.60 per hundredweight for l. c. l. shipments.

The market for old material is considered satisfactory to dealers, with a higher average price being received for all grades. The improvement in the demand for wrought and steel scrap is especially noticeable, and local yards have been prac-

tically depleted of machinery and light cast grades.

Dealers' asking prices for old material are as follows per gross ton f. o. b. cars here:

- No. 1 railroad wrought, \$11.50 to \$12.
- No. 2 railroad wrought, \$8 to \$8.50.
- No. 1 country, \$7 to \$7.50.
- No. 2 country, \$6.50 to \$7.
- No. 1 machinery, \$8.50 to \$9.
- Standard car wheels, \$11 to \$11.50.
- Tram car wheels, \$8 to \$8.50.
- Light cast and stove plates, \$7 to \$7.50.
- Old iron rails, \$13 to \$14.

IRON AND STEEL EXPORTS.

Comparison of United States and Other Countries.

The high record exportation of practically \$250,000,000 worth of iron and steel manufactures from the United States in the calendar year 1911 and of over \$1,500,000,000 worth in the decade ending with that year has led the Bureau of Statistics, Department of Commerce and Labor, to prepare a statement showing the relative rank of the leading nations in the exportation of that important factor of international commerce.

The world's leading exporters of iron and steel, according to official figures covering the latest period for which statistics are available, are the United Kingdom, Germany and the United States, with totals ranging from a little less than \$400,000,000 down to about \$250,000,000 each. To these might be added a second group of countries with smaller totals, which would include Belgium, Netherlands, France, Switzerland and Sweden. These eight countries had in 1910 a total exportation of iron and steel of over \$1,000,000,000, or about 8 per cent. of the entire value of all merchandise entering the international markets of the world. At the head of the list of exporters of iron and steel is the United Kingdom, with a total of \$361,000,000, exclusive of \$16,000,000 worth of agricultural machinery, manufactured in part from iron and steel and by certain countries included under that title. Germany is second in exports of iron and steel, with a total of \$339,000,000, in addition to which exports of agricultural machinery aggregated \$9,000,000. The United States is third, the 1910 figures being \$201,000,000 for iron and steel and \$31,000,000 for agricultural implements. Belgium shows \$65,000,000 worth of iron and steel, including agricultural machinery, exported in 1910, and France a total of \$45,000,000, exclusive of \$1,750,000 worth of agricultural machinery. From Switzerland and Sweden the exports of iron and steel were, in the latest available year, about \$18,000,000 each, exclusive of agricultural machinery, amounting to nearly \$1,000,000 in the case of Sweden and about \$150,000 in that of Switzerland.

While the United States thus ranks only third as an exporter of iron and steel, her progress in that branch of commerce has been rapid, the total exports of that class of articles having increased from \$103,000,000 in 1901 to nearly or quite \$250,000,000 in 1911, and of agricultural implements from \$17,000,000 to \$35,000,000 during the same period. Taking the period of 1900-1910, the latest period for which figures are available in the case of foreign countries, the growth in exports of iron and steel has been as follows: The United Kingdom, from \$271,000,000 to \$361,000,000; Germany, from \$171,000,000 to \$339,000,000; United States, from \$130,000,000 to \$201,000,000; France, from \$27,000,000 to \$45,000,000; Belgium, from \$41,000,000 to \$65,000,000, and Switzerland, from \$11,000,000 to \$18,000,000. In exports of agricultural machinery the United States leads all other countries,

with a total in 1910 of \$31,000,000, against \$16,000,000 for the United Kingdom, \$9,000,000 for Germany and \$1,750,000 for France.

The \$250,000,000 worth of iron and steel and \$35,000,000 worth of agricultural implements exported from the United States last year found markets in practically every part of the civilized world. Steam locomotives and steel rails went largely to Canada, Mexico, Brazil, Argentina and Japan, where the rapid development of railways enabled an increased absorption of those material from this country. Structural iron and steel of American manufacture is being utilized in increasing quantities by most of the leading countries of North America, as well as in Australia and Japan. The farms of Canada, Argentina, Brazil, Australia and New Zealand are requiring increasing quantities of American wire. Our sales of electrical machinery show a healthy expansion in such important markets as the United Kingdom and other European countries, as well as the newer communities of the Western Hemisphere. The same might be said of sewing machines and metal-working machinery. American cash registers and typewriters are facilitating business in offices scattered in every part of the world—in France, the United Kingdom and Germany; in Canada, Mexico and Cuba; in Argentina and Brazil; in India and Australia, and in many other countries, nearly all of them showing larger totals in 1911 than in any earlier year.

The principal articles forming the \$250,000,000 worth of iron and steel products exported from the United States in the calendar year 1911, with the approximate value of each based upon 11 months' figures already at hand, are: Sheets and plates, \$18,000,000; builders' hardware, saws and tools, \$17,000,000; locomotives and other engines, \$17,000,000; steel rails, \$12,000,000; pipes and fittings, \$12,000,000; wire, \$12,000,000; structural iron and steel, \$11,000,000; sewing machines, \$9,000,000; electrical machinery, \$8,000,000; mining machinery, \$7,000,000; bars and rods, \$5,000,000; cash registers, \$4,000,000; pumps and pumping machinery, \$4,000,000; printing presses, \$3,000,000; sugar-mill machinery, \$3,000,000, and tin andterne plates, nearly \$5,000,000, or five times as much as in the preceding year, while stoves and ranges, shoe machinery, laundry machinery, scales and balances, castings and wire nails each exceeded \$1,000,000 in the value of the year's exports, representing for the most part increases when compared with earlier years.

INCREASE IN OIL PRODUCTION.

Total Output of Nearly 220,000,000 Barrels Reported for 1911.

The production of petroleum in 1911 increased slightly over the record-breaking figures of 1910; moreover, the industry assumed a steadier condition, owing to the absence of the very disturbing incidents of 1910, such as the bringing in of the Lakeview gusher and other great wells in California. The trade had also accustomed itself to the unusual wells in the Caddo oil field of Louisiana. The following table gives a comparison of the final figures of the United States Geological Survey for 1910 and the estimated output for 1911:

Production of Petroleum in 1910 and 1911.		
	1910.	1911.
	Barrels.	Barrels.
Appalachian field.....	31,985,515	28,000,000
California.....	73,010,560	81,000,000
Kansas and Oklahoma....	53,157,326	55,000,000
Louisiana.....	6,341,395	10,000,000
Texas.....	8,899,266	9,000,000
Miscellaneous.....	35,661,926	33,000,000
Total.....	209,556,048	217,000,000

The most striking feature of the year

in the petroleum industry was the development of the Electra oil field in Northern Texas.

The total production for the United States is between 215,000,000 and 220,000,000 barrels. The gain in a single State—California—was greater than the net gain shown for the country as a whole, the usual decline in the older districts offsetting the increase in the Middle West and South. Once more the refining interests and marketers of fuel oils, etc., have by strenuous efforts almost compensated the increased production by bringing about an increase in consumption. There is no longer much doubt that a plentiful oil supply will be afforded for many years; rather the general feeling expressed by the question, "Where will oil break out next?" is a disturbing element.

A valued feature in the work of finding use for the great output is the restoration of a better market condition abroad. The exports have increased very satisfactorily. Another outlet is due to the general recognition of the fact that asphaltic oils, which have been a drug on the market, make the best surfacing material for macadam roads.

The petroleum trade as a whole has suffered of late from two antagonistic conditions. First, there has been an oversupply due to the sudden development of great fields first in one part of the country and then in another until confidence became shaken as to the possibility of maintaining a satisfactory price. This condition has had an unfavorable effect on production in the older-settled districts which have passed the gusher stage and yet are capable with fair prices of maintaining a reasonable output for many years. Second, the trade has been constantly handicapped by the fear lest the big producing districts should wane as rapidly as they have waxed and leave a supply far below the capacity of the huge industrial plants designed to utilize such veritable floods of oil as have characterized late years.

For two years, however, discoveries of oil fields of great size have followed one another so closely that doubt has become conviction that the supply is abundant for years. It cannot be denied that the quality of geologic deduction has so changed for the better, thanks to more exact and intelligent field investigations, that the geologist's estimates of the oil resources are now more than generally accepted by the oil producers and users. The common expression "oil is everywhere" is a daily exaggeration of the idea that the oil supply may be depended upon.

For just about a year the oil trade has been developing under this new conviction of a sufficient oil supply, which has especially affected the consumer. The tendency to substitute oil for coal in many industrial establishments is growing rapidly. It is further encouraged by the possibilities of still greater economies by burning oil in internal-combustion engines. Its advantages long known in the manufacture of fine glass are being heeded. It has been adopted by the Navy, and its use increases on the railroads. Oil is being taken seriously.

During the year stocks in general have declined except in California. In the Appalachian field and in the Mid-Continent field they remained stationary. In Illinois there are about 21,000,000 barrels in storage, compared with 27,000,000 in 1910. The stock on the Pacific coast is estimated at 40,000,000 barrels, compared with only 33,000,000 barrels at the close of 1910. In neither year is account taken of such producers' stored oil as has not been sold or even carefully measured, but is chiefly contained in open reservoirs.

In the Appalachian field the pipe-line

price of \$1.30 a barrel has prevailed steadily throughout the year, at the end of which the price of oil of Pennsylvania grade was raised from \$1.30 to \$1.35 a barrel. This is the first advance in price since March, 1907. In Illinois the changes have been as follows: At the beginning of 1911, 60 cents a barrel was paid for light oil and 52 cents for heavy oil. Light oil was raised on May 2 to 63 cents and on June 14 to 65 cents. The heavy oil was raised to 55 cents on May 2.

The Mid-Continent field began the year with oil at 42 cents a barrel, and on January 2 the price was raised to 44 cents. On May 2 this was changed to 46 cents, on June 14 to 48 cents, and on September 15 to 50 cents.

In California the prices were held at 30 to 65 cents, according to quality, with higher prices for oils near the Los Angeles market.

In oil-well drilling the most significant advance has been in the increased popularity of the rotary drilling method and its adoption, with modifications, in regions where the "standard rig" had prevailed, especially in California. The modifications include, chiefly, the installation of costly but efficient combination rigs where the plant contains a complete system of standard tools and even its own engine and boiler equipment and also a complete rotary rig. Another modification consists in the use of certain patent rotary bits for drilling through very hard, flinty limestones, cements, etc. As a last resort these are all temporarily set aside by the standard rig, especially when boulders are encountered.

In oil storage large concrete reservoirs have found favor in California.

In transportation the use of rifled pipes and the practice of heating thick oils while pumping have been extended with good results.

The improvement in manufacturing processes tends in the direction, first, of heat conservation, by preheating the oils by the waste heat of the vapors in the condensation tanks; second, of the distillation of crude oils clear to coke without transferring the residue or tar to special stills, and third, of "topping" or "skimming" oils to take off the gasoline or gasoline and kerosene from crudes which are used chiefly as fuel oils. A tendency is also evident toward obtaining larger yields of gasoline and the light products from crude oils by partial cracking processes.

The production of gasoline from natural gas has made rapid strides and the process is evidently successful when applied to most natural gas from oil wells. An interesting development has been the extraction of oils of low boiling point from wells by attaching a vacuum pump to the well casing and causing the oil to distill out with the gas. It is condensed again at the atmospheric pressure. The gasoline thus obtained is, of course, heavier and more valuable for general use than the lighter products.

Greatly improved conditions in the export trade of all petroleum products characterized the year 1911, in remarkable contrast to the depression in 1910.

According to the Bureau of Statistics of the Department of Commerce and Labor, the exports of crude oils increased from about 165,000,000 gallons for the first 11 months of 1910 to 183,000,000 gallons for the corresponding period of 1911; of naphthas from about 92,000,000 to over 130,000,000 gallons; of illuminating oil from 861,000,000 to 1,025,000,000 gallons; of lubricating oils from 154,000,000 to 164,000,000 gallons, and of residuum from 113,000,000 to 125,000,000 gallons.

For every product the exports in the first 11 months of 1911 not only increased over those of 1910, but even exceeded the

quantities exported in the 12 months of 1900, before the decline took place.

Prices for exported products, which had declined to extremely low points, recovered rapidly, especially in the latter part of 1911, and though they were not as good as in earlier years, the total values were greater than in 1910 or even in 1909.

Since oils were put on the free list imports of crude oil and certain products have become a feature of the United States trade, especially crude oil from Mexico imported into Texas and Louisiana ports. In 1911 the Bureau of Statistics for the first time chronicled the importation of gasoline, 7,639,125 gallons being imported, principally from the Dutch East Indies. In 1909 the importation of other oils, chiefly crude oil from Mexico, amounted to 3,831,295 gallons in the first 11 months. In the corresponding period in 1910 such importations had increased almost sevenfold; that is, to 23,924,571 gallons, and in the first 11 months of 1911 they had increased again to 48,216,167 gallons, worth \$1,640,514.

ALLUVIAL LAND COMPANIES.

Will Reclaim 51,000 Acres in St. Bernard Parish for Farm Development.

Land companies organized by E. L. Chappuis of New Orleans will develop 51,000 acres of land in St. Bernard parish, about 25 miles from that city. Mr. Chappuis, president of the companies, telegraphs the MANUFACTURERS RECORD as follows:

"Louisiana Alluvial Lands Co., 6000; Alluvial City Land Co., 15,000; Alluvial Land Co., 30,000; total, 51,000 acres of wet lands to be reclaimed under 10 sub-drainage districts, each approximately 5000 acres, all under my control as president and general manager for five years; no speculation will be encouraged; only idea is to locate within five years at least 5000 10-acre farms; cost of reclamation will average \$20 per acre, to be paid by said sub-drainage districts; reclamation bonds based on an acreage tax of not more than \$2 per acre under recent legislative act."

Referring further to this important enterprise, Mr. Chappuis is quoted as follows:

"We will build good roads through these units, the terminus of which will be Canal street. We will open up navigable canals within reach of each little farm, which will connect with Lake Borgne, with the city by way of Bayou St. John and the West End Canal, and with the harbor of New Orleans by way of the Lake Borgne Canal. We will build new towns. The Frisco Railroad Co. will extend its tracks, build depots and produce concentrating sheds, and will supply just as many express refrigerator cars as can be used to advantage in transporting the products of these farms to the markets of St. Louis, Chicago and other cities. There will be complete co-operation between our companies, the people of St. Bernard, the Frisco Railroad and the consuming markets of the North.

"Last summer I spent four months in the neighborhood of Boston. I spent those four months in the factories, in the factory settlements, in the homes of the factory employes—among the French Canadians—the greatest lovers of the soil on the American continent—who are working there.

"I talked with their leaders, told them of the bottomless alluvial soil of Louisiana, of the ease with which our lands may be drained, of the system of navigable canals all leading to the harbor of New Orleans, which we install as part of each drainage unit.

"Then I told them that I would soon be

in a position to sell them ten-acre tracts of this land at \$100 an acre, on easy installments.

"The effect on these men was electrical, and let me tell you we will experience no difficulty whatever in drawing many and many a family from the factory districts of New England just as soon as we are in a position to deliver drained farms to them.

"We will first open up 6000 acres as an experimental farm, not because the fertility of the soil requires proof, because abundant proof of that fertility has already been furnished, but to hasten development work in a hundred ways. Our engineers are now on the ground, and their instructions are to draw their plans with the sole idea of giving the ten-acre farmer who will cultivate these lands the best opportunity for success any farmers had anywhere in the world."

It is stated that arrangements have been completed for financing this important enterprise and that \$550,000 is now available for beginning developments, the money being furnished by New Orleans and Chicago capitalists.

Arkansas Drainage Costing \$500,000.

Proposals will be opened on January 30 for the first two contracts of the work to drain the Fourche bottoms of Arkansas and protect the adjoining lands from overflow. Lund & Hill of Little Rock, engineers for the Fourche Drainage District, have completed the plans and specifications. Contract No. 1 will include building all river protection levees on Fourche Island, and the engineers estimate this will require the removal of about 300,000 cubic yards of material. Strings of levees will be built to connect with the old Fourche Island levee, which was built in 1836. One string of levees will be built on the Keatts and Brown plantations, three-quarters of a mile long; another on the Frazier and Fletcher plantations, two miles long, and a third levee along Fourche from the lower mouth up to the high ground near Sweet Home. This will afford protection to about 18,000 acres of land.

The second contract will be for clearing the right of way for the main drainage canal, which will extend from the county line near Alexander across the county to the lower mouth of Fourche bayou near Wrightsville. The right of way will vary from 100 to 400 feet, and will be the beginning of the field work necessary for draining and reclaiming the land. The work will begin by March 1, and the engineers expect to finish these contracts in four months. During the time the contracts are being carried out additional contracts will be awarded for building levees along the flood way and the excavation of various canals and ditches, the building of floodgates and pumping plants.

The estimated cost of the work is \$500,000. All the lands south and east of Little Rock will be reclaimed, and the farming lands southwest of the city will be greatly improved.

To Reclaim Little River Valley.

Referring to plans of the State Levee and Drainage Board of Texas, Arthur A. Stiles, commissioner, Austin, Tex., writes to the MANUFACTURERS RECORD as follows:

"The work of this department in the overflowed valley of Little River in Milam county contemplates first the accurate and complete topographic survey and mapping of the flood plain of the river in that county. This work is now under way, and is being done by skilled topographers. Upon completion of the topographic mapping a system of levees and interior drain-

age will be designed and marked out upon the ground. The regular formation of numerous levee districts as authorized by State law will then be effected for the several topographic divisions of the valley. Bonds will be issued by these districts, as provided under certain State law, and upon the sale of these bonds actual construction of the proposed levees will begin. This department is authorized to survey, design and mark out the levee systems. The actual construction of the improvements is left to the districts, and is done at their expense. Similar surveys and the planning of the levee systems are now being executed by this department in the Trinity near Dallas, and are also contemplated in the near future for the State farms in the lower Brazos."

ARANSAS PASS HARBOR.

Governmental and Private Enterprise in Its Improvement.

[Special Cor. Manufacturers Record.]

Aransas Pass, Tex., January 15.

By the middle of September the Aransas Pass Channel & Dock Co. and the Aransas Harbor Terminal Railroad Co. expect to have completed their road from Aransas Pass to Port Aransas and be ready for traffic. The plan is to connect the city of Aransas Pass by making physical connection with the San Antonio & Aransas Pass road with the harbor at Port Aransas, a distance of six miles. The purpose of the road is to furnish transportation from the main land to the warehouses and wharfs that will be constructed at a point available to deep water. The road will cost approximately \$110,000, and it is the intention of the company to develop shipping facilities at Port Aransas equal to the shipping facilities of other harbors on the Texas coast.

The Pass is being developed by the United States Government by the construction of jetties, both north and south. The Government is now dredging to a depth of 25 feet, and the ultimate width of the harbor will be 1200x3000 feet, and then narrowing to a width of about 400 feet, running to deep water. With the purpose of rendering a greater protection to the harbor in case of storms, the Government is building a jetty of stone on St. Joseph's Island running in a northerly direction and paralleling the harbor. The company will put in a galvanized-iron warehouse with 75,000 feet of floor space and a wharf 30 feet running alongside of the warehouse at a cost of \$25,000.

CHARLES E. TRIMBLE.

Working for Immigrants.

Chamber of Commerce,

Lagrange, Ga., January 9.

Editor Manufacturers Record:

The tide of immigration from Northern States to Troup county, Georgia, has begun to set in. The Chamber of Commerce has begun a campaign for more farmers in Troup, and it is bringing results. Over 35,000 names of Northern farmers have been secured, and circularizing work is now being done among 5000 of these farmers. The names represent the flower of the best farmers in seven different States, and the Chamber counts on getting farmers who have money enough to carry them through until they become acquainted with Southern methods and lands.

In this immigration work the Chamber is being assisted by the officials of the Atlanta, Birmingham & Atlantic Railroad, and a number of real estate men in the North, who are interested in bringing farmers to Southern lands.

To assist local Troup county farmers and those who may later come into the county, the Chamber of Commerce has secured the service of the National Department of Agriculture to make a soil survey

of the county. This work is under the immediate direction of Dr. Milton M. Whitney of the bureau of soils, and R. W. Sweet, with an assistant, is the active man in the county in charge of the work.

LESTER C. BUSCH, Secretary.

Norfolk Territory.

Readers of the MANUFACTURERS RECORD who have recently read the suggestive articles of Mr. Walter Sharp of Norfolk on the importance of tidewater Virginia and eastern North Carolina in truck growing will be interested in a booklet which he has prepared for the industrial commission of Norfolk, elaborating the subject of agricultural and food production in and around Norfolk and its tributary territory, dealing with truck and staple crops, and with fish, flesh and fowl. In great detail are presented the facts as to climatic and health conditions, water and rail transportation facilities, the varieties of marine products, shipments of truck and production in intensive farming, and this is followed by descriptions of soils and crops of Norfolk, Princess Anne, Nansemond, Isle of Wight, Warwick, Elizabeth City, York, Gloucester, Mathews, Accomack, Northampton, Northumberland, Currituck, Camden, Pasquotank, Perquimans, Chowan, Washington, Tyrrell, Dare, Hyde, Beaufort, Craven, Pamlico and Carteret counties, North Carolina. The booklet shows the results of a vast amount of minute investigation and careful study, and its facts ought to be studied by every farmer in other parts of the country seeking a location in the South.

Tennessee Company Improvements.

The Tennessee Coal, Iron & Railway Co. of Birmingham will undertake improvements in connection with the recent removal of State convicts from its No. 12 mine, and will practically build a town at Rogers Camp, as the convicts' stockade at No. 12 mine has been called. Contract has been awarded for the construction of 150 miners' houses, each having four rooms and being located on a large lot, providing ample space for growing vegetables, flowers and shrubbery. Contracts will be awarded for building schoolhouse, church for white people, church for negroes, large bathhouse, etc., and the company will provide children's playgrounds, parks and other open-air recreation places. There will also be constructed a water and filtration plant. In the general improvements it is proposed to follow the general contour of the land, allowing all roads and streets to follow the natural routes. These roads will be so located that the maximum grade will not exceed 6 per cent. The schoolhouse and one of the churches will be constructed of brick after modern plans and specifications, and will be located on land providing sufficient space for extensive lawns.

This work of the Tennessee Coal, Iron & Railway Co. will be a continuation of that corporation's previous efforts to provide such modern facilities as will conduce to the welfare and efficiency of its employes.

Shipped 92,000,000 Cigars.

During 1911 there were more cigars manufactured and shipped from Key West than during any previous year in the city's history. Last year's shipments totaled 92,000,000 cigars, a gain of 15 per cent. over the shipments of 1910.

At the annual meeting of the Builders' Exchange of Jacksonville the following officers were elected: President, J. H. Kooker; first vice-president, W. P. Richardson; second vice-president, O. P. Woodcock; secretary, J. H. Gay.

WHERE CROPS THRIVE.

The Splendid Surroundings of Port Gibson, in Mississippi.

Mayor L. A. Smith of Port Gibson, Miss., writes to the MANUFACTURERS RECORD:

"Seeing in your valuable publication many interesting articles concerning soil and climate, fauna and flora of other sections, I have thought some things concerning the section surrounding Port Gibson might be of interest to your many readers. By this I mean that section of the State from Vicksburg, 30 miles on the north, to Natchez, about the same distance on the south, and lying upon the front of the great Father of Waters. This section of the State is known as the Grand and Petty Gulf Hills, and was the earliest settled of any part. While its topography is broken, prior to the appearance of the boll-weevil it ranked first as a cotton-producing section, being especially adapted to the growth of long-staple varieties, which sell from 30 cents a pound upward, and always in demand. Port Gibson is the home of the propagator of the famous long staple Allen cotton. The exhibit of Mr. Allen's cotton took first premium at our county fair in October, then at our State fair in November, and is at this writing on exhibition at the Chicago Land Show. Mr. Allen has demonstrated that the culture of cotton can be made profitable in the face of the much-discussed boll-weevil problem.

"Our soil is a deep loam, which recuperates with a tenacity unknown to any other section of the South, which is evidenced by the fact that the abandoned fields soon reproduce the cane and larger vines of its virgin growth. The blackberry vine also grows with great luxuriance, than which there is no greater evidence of the recuperative powers of soils. Our native grasses are perennial, and of most lucrative character, the Bermuda grass and the Lespedeza clover having the greatest of fattening value and furnishing pasturage for from seven to eight months in the year, the Bermuda grass reproducing from the roots and the Lespedeza reseeding itself. These facts, with our short winters, not exceeding four months of the 12, and during which time most of animals can procure, in part or in whole, their living from the cane brakes and spontaneous growths, make this a highly-favored section for the raising of all kinds of live-stock.

"Frequent living streams furnish abundance of best of water for man and beast. From 30 to 60 bushels of Indian corn can be raised on these bottoms without any extra fertilization. Already stock raising has become quite an industry among our people. Our hens do not have to go into winter quarters, consequently the egg supply is generally good, and regular in its production. On December 23 eggs were selling at 30 cents per dozen, and our counters are well stocked. This is the paradise of all varieties of fowls, both domestic and wild.

"Our timber supply is abundant, and reproduces itself with every recurring generation. Oak, ash, hickory, magnolia, beech and other growth abound. This is not in the section of the long-leaf pine, but of the poplar and kindred hardwood growths. Our need is not better climate or soil, but a larger citizenship of thrifty, sturdy farmers to develop the rich resources which a magnanimous Creator has given unto us, and such people will receive a hearty welcome to our homes, our schools and our churches. We invite such to come and spy out the land for themselves.

"No State in the Union is taking greater interest in the good-roads movement than Mississippi, and more specially this sec-

tion of ours. The automobile is a common vehicle of travel among our people, and its honk-honk is familiar to every child."

Technology of Petroleum.

The South is to receive first attention in connection with the report on the technology of petroleum in this country, which is being prepared by Frederick G. Clapp for the United States Bureau of Mines. Mr. Clapp, who is a specialist in oil and gas problems and chief geologist of the bureau of associated geological engineers, has been given a temporary appointment as petroleum engineer in the Bureau of Mines. The problem is to investigate what can be done toward improving certain technical aspects of the petroleum and natural gas industry. The majority of the companies and individuals producing oil and gas have been so busy making money that they have not been able to give attention to such scientific and technical matters as the possibility of increasing the life of wells, of spacing the wells most economically, of securing the best co-operation between various companies in the matter of offsetting wells and many other matters which arise in the business from time to time. It seems essential to obtain the best information which can be found by a careful study of conditions and comparison of many fields, and this is being done with a view to showing the operators how they can perhaps save money in many ways. Mr. Clapp is accompanied on the present trip by his assistant petroleum engineer, Mr. L. G. Huntley.

Wilmington Charters During 1911.

One of the phases of progress indicating the business activity and growth of a city is the granting of charters to various enterprises. During 1911 Wilmington, N. C., made gratifying progress in this direction, 34 charters having been issued there. Nine of these were for industrial enterprises, and the balance were for various general business propositions, from grocery stores to financial institutions. The total authorized capitalization of these companies was \$2,585,000, of which \$700,000 was subscribed at the time the charters were issued. The principal companies were the following: Carolina Metal Products Co., capitalized at \$150,000; Wilmington Handle Co., \$125,000; Wilmington Marine Railways Co., \$100,000; Astyrodine Chemical Co., \$100,000; Standard Turpentine Co., \$125,000; Cape Fear Marine Railway, \$125,000; Bardin Motor Co., \$10,000; A. D. Brown Dry Goods Co., \$125,000; National Wood Distilling Co., \$110,000; Meier's Marble and Granite Works, \$25,000; Post Dater Stamp Co., \$500,000; Hanover Trust Co., \$25,000; Carolina Title Insurance Co., \$100,000; Dime Savings Bank, \$100,000; North State Candy Co., \$50,000; Carolina-Florida Fish Co., \$50,000.

A \$1,000,000 Hydro-Electric Plant.

Dispatches from Springfield, Mo., state that the Federal Light & Traction Co. of New York, owning light and power enterprises in Springfield and other cities of the Ozark district, has signed a contract with the Ozark Power & Water Co. whereby the latter will proceed with the construction of its proposed water-power-electrical plant on the White River, two miles west of Forsyth, in Taney county, Missouri. The cost of the dam, powerhouse, substations and transmission system is estimated at nearly \$1,000,000. Referring to this proposed construction, the Ozark Power & Water Co., Holman & Laird, consulting engineers, St. Louis, wires the MANUFACTURERS RECORD as follows:

"Spillway section, 44x510 feet; powerhouse, 651x123 feet; core wall, 450 feet;

Ambursen Hydraulic Construction Co., Boston, has contract for dam; S. Morgan Smith Company, York, Pa., has contract for water-wheels; General Electric Co., Schenectady, N. Y., has contract for electrical machinery; total equipment, five 875-kilowatt volts alternating; total transmission line, 120 miles."

Virginia.

The annual report of Commissioner G. W. Koerner and the State Board of Agriculture and Immigration of Virginia, just issued, is a splendid exposition not only of the work of the department during the year, but of the agricultural operations under way in the State and the opportunities there for farmers. During 1911 70,000 copies of the annual report were distributed and nearly 800,000 copies of bulletins on agricultural subjects, including the 30-page bulletin containing records of analyses of fertilizers and agricultural seeds, helpful articles on soil improvement, seed selection and labor-saving devices. Wise advice is contained in the following by Commissioner Koerner:

"The yearly increase in the number of land buyers who are locating in this State is constantly bringing up the price of our farming land. The price of land has doubled during the past 10 years, an increase in value of \$259,000,000, and if the General Assembly will make liberal appropriations for advertising and distributing literature showing the wonderful resources and opportunities offered in this State the price of our lands will double again within the next 10 years. The fact is that this State, considering the many unsurpassed advantages, has today the cheapest farm lands in the United States. Our soils are the kindest in the world. They have stood the hardest knocks and skinning, and are the quickest to improve. In climate, diversity of soils, fruits, forests, water supply, mineral deposits and variety of landscape, including mountain, valley, hill and dale, and the broad savannas of tidewater, the sun never illumined a more beautiful country, the plowman never turned a kinder soil, and the stranger never shook the hand of a more hospitable people. Virginia is growing each year more rapidly in wealth and population. The skies of Virginia are bright with hope and her people conservatively and courageously are each year building a broader, a richer and a greater Commonwealth."

To Manufacture Blau Gas.

Referring to its plans for manufacturing Blau gas, the Southern Blau Gas Co., H. C. Terstegge of Louisville, president, writes to the MANUFACTURERS RECORD as follows:

"Will operate principally in Kentucky and Tennessee, and is a subsidiary of the Blau Gas Company of America. There will be an authorized issue of \$500,000 7 per cent. cumulative preferred stock and \$1,500,000 of common stock. We have not yet settled as to whether the building will be erected in this city or some other city in Kentucky or Tennessee. We are looking into that matter now. We plan to erect works that will have a capacity of at least 600 bottles of Blau gas daily. The gas is the invention of a German chemist named Blau. It is compressed into a liquid state and is shipped in steel bottles, each bottle containing about 20 pounds of the liquid gas. It has from three to four times the British thermal heat units possessed by ordinary coal gas. It is cheap, easily transported, and can be attached to any house that is now piped for gas, and where not piped the house can be readily piped with small copper tubing that does not disfigure the walls or decorations. It is especially fine for gas stoves and for lighting purposes with man-

tels. There are many towns and cities in Kentucky and Tennessee that have no electric light and gas, and the company plans to operate principally in such towns, especially at the beginning of its career."

To Develop 2000 Horse-Power.

The Alabama Power Development Co. is now proceeding with its proposed development of Jackson Shoals, this enterprise being outlined in a letter to the MANUFACTURERS RECORD from R. J. McClelland, engineer of the Electric Bond & Share Co., 71 Broadway, New York. Mr. McClelland writes:

"This development is being built by the Phoenix Construction Co. at Talladega, Ala., for the Alabama Power Development Co., Talladega, Ala. Two thousand horse-power is to be developed in two vertical hydro-electric units, using S. Morgan Smith water-wheels and General Electric electrical apparatus. Energy is to be distributed to Anniston and Talladega through a transmission line which passes within a quarter of a mile of the present development. Transmission voltage 60,000. Estimated cost of the work \$200,000. This office is in charge of the work, the construction manager at Jackson Shoals being Peter R. Haley. Work was started on November 1, and is expected to be completed April 15."

Billings Process Co.

The Billings Process Co. has been incorporated with an authorized capital stock of \$1,000,000. C. W. Hill and J. R. Billings of Birmingham are interested, and Mr. Hill writes to the MANUFACTURERS RECORD as follows:

"The purpose of the company is to hold certain patents and rights pertaining to a new process in the art of making iron and steel. Experimental work has shown that coke pig-iron can be greatly improved in strength, made softer and made to cast practically without blow holes by this process. The process is a chemical one, and it is proposed to carry it out at the blast furnace by first catching molten iron in a ladle and then treating it while in the ladle, and then pouring into pig molds. It is stated that the cost of this treatment is small, and that the value of the iron is very much increased. Arrangements have been made to begin the manufacture of this iron in quantity, and it is expected to have it on the market within the next 90 days. Main office of company is at 201 Woodward Building, Birmingham."

Fernandina Exports Greatly Increase

Referring to exports from Fernandina during December, a dispatch from that city states:

"The month of December was a record-breaker for the value of foreign shipping, which amounted to \$1,428,114 for the month in exports. These exports consisted of phosphate rock, 10,900 tons; rosin, 108,604 barrels; turpentine, 1,149,905 gallons; cottonseed, 672,000 pounds; poplar logs, 59; pitch pine lumber, 439,000 feet; cedar pencil slats, 222 cases; palmetto leaves, 31,800 pounds.

"The countries to which these commodities went were Austria, Belgium, Germany, Italy, Netherlands, England and Canary Islands. The following nations were represented by ships which left this port during December: Austria, Belgium, Great Britain, Germany, Denmark and Sweden.

"The imports were muriate of potash, 56,358 pounds; sulphate of potash, 56,358 pounds; kainit, 4323 tons, and salt, 1550 tons. The value of the imports was \$32,293. The fertilizer ingredients came from Germany and the salt from the great salt works near the Manchester canal in England."

GOOD ROADS

WEEK'S HIGHWAY RECORD.

Progress in Southern Road and Street Improvement.

[Full details of highway undertakings are given in the Construction Department.]

Bonds Voted.

Jackson, Ky.—City voted \$15,000 bond issue for street improvements.

Bonds to Be Voted.

Corpus Christi, Tex.—City will vote within 60 days on \$125,000 bond issue for street improvements.

Greensboro, N. C.—City contemplates \$100,000 bond issue for street paving.

Harrisonburg, Va.—Plains district of Rockingham county will vote on \$30,000 bond issue for road construction.

Mexia, Tex.—Precinct No. 5 of Limestone county will vote February 17 on \$20,000 bond issue for road construction.

Nacogdoches, Tex.—City will vote on \$50,000 bond issue to macadamize business streets.

Vicksburg, Miss.—City postponed date of election for voting on \$100,000 bond issue for street improvements from January 23 to February 14.

Contracts Awarded.

Anniston, Ala.—Calhoun county awarded contract for road construction.

Binghampton, Tenn.—City awarded contract for sidewalks, curbs, gutters, etc.; cost \$13,648.

Brewton, Ala.—Contract has been awarded for grading, bridging and piping State highway; cost \$8500.

Dallas, Tex.—City awarded contract at \$6276.74 for asphalt macadam paving.

Galveston, Tex.—City awarded contract for asphalt macadam paving.

Louisville, Ky.—City awarded contract at about \$48,000 for paving portion of Bardstown road.

Magnolia, Miss.—City awarded contract at about \$12,000 to construct approximately 10,000 square yards of concrete sidewalks and street crossings.

Tuscaloosa, Ala.—City awarded contract to construct 550 square yards sidewalks and 2080 linear feet of curb and gutter.

Contracts to Be Awarded.

Atlanta, Ga.—City and Fulton county will expend about \$1,000,000 during 1912 for road and street improvements.

Atlanta, Ga.—City receives bids until February 5 for granite and concrete curbing, tile, cement and brick sidewalks, sewers, etc.

Baltimore, Md.—City received bids until January 17 to construct about 194,000 square yards of sheet asphalt, vitrified brick and granite block paving.

Bentonville, Ark.—Benton county will complete 90-mile turnpike previously begun.

Crockett, Tex.—City and Houston county will construct cement sidewalks on public square.

Crowley, La.—City and Police Jury will expend about \$50,000 for paving.

Elizabethton, Tenn.—Carter county receives bids until February 1 for grading about seven miles of road and macadamizing about 13½ miles.

Fort Pierce, Fla.—St. Lucie county has \$200,000 bond issue and receives bids until February 7 to construct 60 miles of hard-surface roads, bridges, docks, etc.

Fort Worth, Tex.—City received bids until January 16 for about 2045 square yards of street construction.

Hannibal, Mo.—City will construct brick and asphalt macadam street; cost of brick paving to be \$60,000.

Houston, Tex.—City ordered 1,000,000

bricks for paving German street and Houston Ave.

Jacksonville, Fla.—Jacksonville Heights Improvement Co. will construct 30 to 40 miles of sand-clay road.

Jonesboro, Tenn.—Washington county will construct road through county to connect with road in Sullivan county.

Louisville, Ky.—City receives bids until January 30 for asphalt paving and vitri-brick gutters on several streets.

Mt. Sterling, Ky.—City will pave additional streets with brick.

Rome, Ga.—City receives bids until February 14 to construct about 17,000 square yards of pavement and about 6500 linear feet of curbing.

San Antonio, Tex.—Bexar county receives bids until January 20 for grading, graveling and resurfacing roads.

Talladega, Ala.—Talladega county receives bids until February 15 to grade, drain and surface with gravel about four and one-half miles of road.

Waycross, Ga.—City opens bids February 1 for sidewalk construction to cost about \$45,000.

Willoughby Beach, Va.—F. L. Portlock, 242 Monticello Arcade, Norfolk, receives bids until January 20 for repairing and extending clay road.

Good Roads at Tupelo.

Tupelo, Miss., January 8.

Editor Manufacturers Record:

Tupelo has an ideal location from the standpoint of climate, and its railroad facilities are good. The Frisco and M. & O. railways cross at this point. The farming section is susceptible of high and profitable cultivation, and there is now a sentiment to diversify farming. We are located in the alfalfa belt, and there is noticeable increase each season in the growing of alfalfa.

This district, of which Tupelo is the hub, is building 20 miles gravel pike, and this alone is doing wonders for the wealth of this county and daily crystallizing sentiment for more roads in the county. The town is just finishing a Y. M. C. A. building costing \$30,000.

The business men of the town have organized a live commercial body for the advancement of the town's interest. More than 50 names have been subscribed for membership, and it is a reasonable estimate that the membership will reach 150. They will have modern office space and a paid secretary, whose business will be specifically to look after the interest of the commercial life of the town.

W. B. Troy.

Texas Commercial Secretaries.

At the meeting of the executive committee of the Commercial Secretaries and Business Men's Association in Dallas last week an appropriation of \$10,000 was made for the purpose of carrying on the work of the Texas Welfare Commission. A communication was read from Peter Radford, president of the Farmers' Union, requesting the co-operation of the association in the Farmers' Union work, and a resolution of acceptance was adopted by the committee. It was decided to hold six meetings, one at Houston, Dallas, Fort Worth, San Antonio, Austin and Abilene. The first will be at Houston March 7, 8 and 9, the program to be announced later by the chairman. At the Houston meeting the date of the next meeting will be arranged for.

The Board of Trade of Winston-Salem N. C., J. S. Kuykendall, secretary, is circulating a pamphlet giving in condensed form a mass of valuable facts about the city and its surroundings and the opportunities there for manufacturing, trade, commerce and agriculture.

RAILROADS

[A complete record of all new railroad building in the South will be found in the Construction Department.]

PREPARING TO EXTEND.

New Orleans, Mobile & Chicago Reorganizes and Arranges for New Financing.

The New Orleans, Mobile & Chicago Railroad Co., in the control of which the Louisville & Nashville Railroad recently became associated with the St. Louis & San Francisco Railroad, has been reorganized by the election of William F. Owen of Mobile to succeed L. S. Berg as president; he has been vice-president and general manager. B. L. Winchell, president of the Frisco, was elected vice-president and chairman of the board. Milton H. Smith, president of the Louisville & Nashville, was elected vice-president to succeed Brayton Ives. George W. Cary is treasurer; T. D. Heel, assistant treasurer; F. H. Ricker, secretary, and H. L. Broden, assistant secretary. The executive committee is headed by Henry Walters, the other members being B. F. Yoakum, chairman of the Frisco; M. H. Smith, B. L. Winchell and W. F. Owen. It is announced from New York that the directorate consists of Messrs. Walters, Smith, Yoakum, Owen and Winchell, with W. L. Mapother, C. W. Hillard and J. H. Ellis, these being new members of the board, the only old members re-elected being L. S. Berg, G. R. Sheldon and C. K. Beekman. The retiring directors are Elisha Walker, F. A. Plummer, Alonzo Potter, E. D. Pray, W. C. Sheldon, C. W. Jester, E. K. Stallo and S. Wexler.

Mr. Berg is quoted saying: "Our plans for the construction of the railroad up to the Ohio River crossing are about completed. At least we know that it will be built from Middleton, Tenn., to Paducah, Ky., to make connection with the Chicago & Eastern Illinois line at Metropolis. The bridge for the connection is already under construction by the Burlington, so it will not be necessary for the New Orleans, Mobile & Chicago to go to that expense, but the construction from Middleton to Paducah will entail a large financial outlay. There has been a general opinion that the Frisco had obtained the control of the property, and that it would practically be operated by that system. Such is not the case. The line will continue to be an independent road, but the control of it will be owned jointly by the Louisville & Nashville and Frisco lines."

Mr. Berg is further reported saying that he will retire from railroad life for a year or two to travel in Europe. He will sail January 23.

B. F. Yoakum is quoted in a report from New York as saying that Kuhn, Loeb & Co. will be bankers for the Chicago & Eastern Illinois Railroad, which is controlled by the Frisco, and it is further said that the financing for that line is understood to be in preparation for its connection with the New Orleans, Mobile & Chicago to provide a through route from Chicago to New Orleans and Mobile. The last-named road, it is said, is planning for an extension and refunding mortgage to take up the outstanding obligations of the line and finance its new construction.

NORFOLK & WESTERN WORK.

Issue of Convertible Bonds Proposed to Finance Betterments of the Property.

The Norfolk & Western Railway Co., according to announcement made in New York, proposes to issue from \$12,000,000 to \$13,000,000 of 4 per cent. convertible bonds, which, it is stated, are for the pur-

pose of reimbursing the company's treasury for such expenditures made since June 30, 1911, and to complete further additions and betterments, including 42 miles of second track, extensive enlargements and improvements of yards, coal piers and other terminal facilities at Norfolk and Lambert's Point, Va., and at Columbus, O., and such additional passing sidings, new bridges, equipment and other construction and improvements as are required for the economical movement of the increasing traffic. Since the date named work has continuously progressed upon the branches, extensions and double track referred to in the last annual report, and also upon sidings, yards and other facilities. The present stockholders of the company are offered the privilege of subscribing for the bonds to the amount of 12½ per cent. of their holdings of stock. The bonds will mature September 1, 1932.

A director of the road is quoted as saying that neither new construction nor the acquirement of any other lines is contemplated, but that the company is simply asking its shareholders to finance the requirements of their property for the next two years that it may be in proper position to care for its growing business.

ROCK ISLAND'S NEW LOAN.

Bridge and Terminals at Memphis Will Be Financed—Bill in Congress.

The Rock Island lines have, it is announced, sold to Speyer & Co. of New York \$20,000,000 of 5 per cent. 20-year debenture bonds of the Chicago, Rock Island & Pacific Railroad Co., and the proceeds will be used in part for the proposed new terminals at Memphis and the construction of the new bridge for which a bill is now before Congress. Other additions and betterments will also be financed out of the issue.

In connection with the steps taken at Washington to obtain the necessary legislation to span the Mississippi with another railway structure it is stated that an agreement has been made with the railroad company that the bridge, in addition to carrying the tracks, will have a carriage and wagon way provided by the company, but that cost of building the approaches to the roadway will be borne by the city of Memphis and the State of Arkansas.

J. B. Berry, chief engineer of the Rock Island, Chicago, says that the bridge will be erected in the vicinity of the present Frisco system bridge at Memphis. No plans have been made for the new structure, but after the bill has passed Congress work will begin promptly, and it is expected to begin operations for the erection of the bridge some time during next summer.

VIRGINIAN TO THE LAKES?

\$20,000,000 Stock Issue Proposed, Which May Mean Extensive Plans Ahead.

Official notice is published that at the annual meeting of the Virginian Railway Co. at Norfolk on January 27 the stockholders will be asked to vote upon a proposed issue of \$20,000,000 of 5 per cent. cumulative preferred stock. This will increase the capital stock to \$65,000,000, as there is now \$30,000,000 of common stock.

A report from New York says it is understood there that the Virginian is going ahead with a plan to secure a line through to the Great Lakes, and has made elaborate surveys from its western terminus at Deepwater, W. Va., to connect up for the objective points. It has been understood for some time that the company has all along had in view the possibility of getting through to Chicago and other places on the lakes, but no official announcement of the plans has been made. Urban H.

Broughton of New York is president of the road, which was built by the late Henry H. Rogers. Its officers are silent as to the purpose for which the new stock is desired. It would appear, however, that it is not intended to issue it all immediately, as the notice for the meeting says that the minimum capital stock, including both common and preferred, shall be \$50,000,000 and the maximum amount \$65,000,000, which latter is what the sum total would be if the entire \$29,000,000 of new stock were added at once to the present issue.

New Equipment, Rails, Etc.

The Texas & Pacific Railway, says a report from Dallas, Tex., will place contracts in a few days for 20 steel passenger cars. The company has already ordered 10 heavy passenger locomotives, 10 heavy consolidation freight locomotives and 200 coal cars.

The Southern Railway, according to a market report, will increase its rail order placed with the Tennessee Coal, Iron & Railroad Co. It has also ordered 3000 tons from the Maryland Steel Co.

Nine Mikado-type locomotives have been ordered by the Virginian Railway from the Baldwin Works, Philadelphia.

The Nashville, Chattanooga & St. Louis Railway has ordered 5000 tons of rails from the Tennessee Coal, Iron & Railroad Co., Birmingham.

The Baltimore & Ohio Railroad is expected to soon award contracts for 36 passenger cars.

The Burlington Route has ordered 1200 tons of structural steel from the American Bridge Co., New York.

The Rock Island Lines are reported in the market for 3000 tons of structural steel.

H. Martin, vice-president and general manager of the International & Great Northern Railroad, Houston, Tex., is quoted saying that specifications are being prepared for the purchase of 5 locomotives and 20 passenger cars.

The Norfolk & Western Railway has ordered 2000 tons of steel from the American Bridge Co.

Locomotive orders reported pending are 45 of the Rock Island Lines and 25 for the Norfolk & Western.

The Atlantic, Okeechobee & Gulf Railway desires quotations on track, bridge and building materials, besides machinery and equipment for roundhouse and repair shops. T. P. Bell is secretary, Box 712, Tampa, Fla.

Georgia & Florida Report.

President John Skelton Williams of the Georgia & Florida Railway has submitted its fourth annual report to the stockholders. It covers the fiscal year ended June 30, 1911. Gross earnings were \$704,936, increase as compared with the preceding year \$183,697, or 35 per cent. Operating expenses were higher, and their ratio to gross was 81 per cent., as compared with 78.2 in the previous year. Net earnings were, however, \$133,799, an increase of \$20,411, or 18 per cent.

During the year the company completed its line to Kingwood, Ga., and from there for two miles its trains run into Moultrie over the Atlanta, Birmingham & Atlantic Railway. At Valdosta it has built a warehouse 415x62 feet, and another warehouse 210x62 feet is approaching completion. The construction of an extension from St. Clair into Augusta may be necessary.

President Williams also says: "The entire section through which the Georgia & Florida Railway operates has been favored during the past season by abundant crops, and, notwithstanding the comparatively low prices now prevailing for cotton, conditions throughout that section

are prosperous. A large amount of new land is being brought under cultivation, and many farmers are moving into this territory from other sections, drawn hither by the attractive prices at which lands are obtainable, the excellent quality of the soil, the advantages of climate and other conditions and surroundings which are proving each year more and more influential with homeseekers from the West and Northwest. There are comparatively few foreigners in this section of the country.

"That the development of this region will continue and will proceed at an even greater ratio there can be no doubt. The setting and building up of its local territory must assure a steady increase in the business of the Georgia & Florida Railway in the future, and to these local earnings will be added the revenue derived from the movement of through business received from connecting lines, which is growing steadily from year to year."

Will Build a Motor Railroad.

Theodore F. Koch & Co., owners and colonizers of Texas Gulf Coast lands, 405-408 Binz Building, Houston, Tex., writes that they have decided to build an interurban or motor railroad from Riviera Station, on the main line of the St. Louis, Brownsville & Mexico Railway, 15 miles south of Kingsville, Tex., to Riviera Beach, on Baffins Bay. The road will be about 10 miles long, and will be owned by the firm, although it will be operated by a construction company.

Continuing, the firm says: "We will build the railroad of standard gauge and use 50-pound rails and hard-pine or mesquite ties. We expect to use a strong gasoline car or motor power for passenger, mail, express and baggage service, and it is the intention that one of our motors shall be strong enough to haul one or two freight cars. The lands through which this motor line will run are all owned by our company excepting those already sold to settlers, of whom there are 175 now on the ground. Riviera Beach is one of the nicest locations for a summer and winter resort on Baffins Bay, in Southwest Texas, 18 miles from the Gulf of Mexico."

L. & N.'s New Low-Grade Line.

E. V. Rawn, manager for the Walton-McDowell Company, railroad contractors, Brentwood, Tenn., writes that the firm has been awarded 19½ miles of heavy work on the Lewisburg & Northern Railroad from a point near the Nashville water-works to a point near Clovercroft, Tenn. The work consists of about 1,000,000 yards of excavation and 10,000 yards of masonry. This is part of the new line of the Louisville & Nashville Railroad's low-grade route to Decatur, Ala. The firm has two years in which to complete their work, which will be started immediately. Camps are being erected and machinery is in transit. It is possible that a part of the steam shovel work on the contract will be sublet.

S. Walton, of the firm, is from Falls Mills, Va.; J. R. McDowell is from Knoxville, Tenn.; J. E. Rhodes is from Franklin, Tenn., and Mr. Rawn from Falls Mills. Other large work upon which they have been engaged is the Clinch Mountain tunnel on the Clinchfield route and the Radford cut-off tunnel on the Norfolk & Western Railway.

Seaboard Shops at Savannah.

W. L. Seddon, chief engineer of the Seaboard Air Line, says that the construction to be done at its Savannah shops covers the replacing of buildings that were burned. It consists of a new 85-foot turntable, a 10-stall reinforced-concrete roundhouse with 10 extra pits, a machine, erecting and blacksmith shop 110x130 feet of

steel frame and reinforced concrete, and a power-house 40x60 feet of steel frame and galvanized iron.

A report from Savannah says that a building permit has been issued to the Fairbanks-Morse Company of Chicago to begin construction of the shops, roundhouse, etc. It says that their cost will be \$75,000. R. S. King represents the contractors.

Newport News & Old Point Deal.

It is announced that Allen & Peck, traction experts, of New York, have taken over the property of the Newport News & Old Point Railway & Electric Co. at Newport News, Va., and that they will rehabilitate the property. C. Loomis Allen of Syracuse, N. Y., was elected president, and W. T. Peck of Schenectady, N. Y., vice-president, the other directors being W. J. Payne of Richmond, Va., chairman; Henry L. Schmelz of Newport News, Chas. E. Hewins of Hampton, B. Howell Griswold of Baltimore, F. Oppen, James May Duane and C. M. Dickey of New York, William Stuart being secretary and treasurer. The Citizens' Railway, Light & Power Co. is included.

Alabama & Northwestern Operating.

The Alabama & Northwestern Railroad, recently purchased from the Vredenburg Lumber Co. by John T. Cochran of Mobile, has, it is officially announced, been incorporated with \$160,000 capital stock, and is now conducting passenger and freight service between Pine Hill, Ala., on the Southern Railway, and Vineland, Doyle, Dixons Mills, Sweetwater, Nana-falia, Nicholasville and several other places. The officers of the road say that the business is most satisfactory. John T. Cochran is president; W. C. Cochran, vice-president; William Toxey, chief engineer; P. C. Byrne, superintendent. Headquarters at Mobile.

Piedmont & Northern Stations.

The Piedmont Traction Co. wires that the addition to the present transformer station at Greenville, S. C., is 50x70 feet, and contains two 500-kilowatt motor generators for interurban railway transformers, switchboards, etc. The building is of concrete unit brick, with fireproof roof.

This is one of the 10 substations that the company is building for the operation of the Piedmont & Northern lines. The substations are being built by the company's own engineers, but the passenger stations are being built by contract. The Westinghouse Electric & Manufacturing Co. is furnishing the machinery.

Immigration Bureaus Consolidate.

On February 1 the Texas & Pacific and International & Great Northern railroads will form jointly an agricultural department. R. R. Claridge, now immigration agent for the Gould lines, will have charge of the department. A corps of expert agriculturists and horticulturists will be employed to direct an educational campaign for farmers in Texas and Louisiana. The new department will affiliate with both the State and National departments for the improvement in conditions. Special efforts will be made to encourage diversification of crops and the use of commercial fertilizers. The department will furnish at all times any information desired through men who are experts in all lines of scientific agriculture, stock raising, dairying, etc. For the present the efforts of the department will be devoted to East Texas and Louisiana, but later on it is the intention of the companies to carry the work to all districts traversed by the two railroads.

TEXTILES

[A complete record of new textile enterprises in the South will be found in the Construction Department.]

Correspondence relating to textile matters, especially to the cotton-mill interests of the South, and items of news about new mills or enlargements, special contracts for goods, market conditions, etc., are invited by the MANUFACTURERS RECORD. We shall be glad to have such matters at all times, and also to have any general discussion relating to cotton matters.

The Appalachian Mills.

Referring to his company, M. G. Thomas, vice-president of the Appalachian Mills of Knoxville, writes to the MANUFACTURERS RECORD as follows:

"We have recently moved into our new mill, in the heart of the manufacturing section of the city. We have one of the most modern mills in the entire country. We have the latest electric drive. Our daily capacity is 700 dozen garments of men's two-piece underwear. We have about 50 knitting machines and 150 sewing machines, and we operate a total of approximately 225 hands. We are contemplating in the early future installing our own spinning plant, which will mean an additional mill of about 10,000 spindles. We have not decided positively, but are considering it seriously, as this mill consumes about 40,000 pounds per week, which is the greatest consumption of cotton yarn of any mill in the South which buys cotton yarns from other mills."

The Cotton Movement.

In his report for January 12 Col. Henry G. Hester, secretary of the New Orleans Cotton Exchange, shows that the amount of cotton brought into sight during 134 days of the present season was 10,274,722 bales, an increase over the same period last year of 1,378,650 bales. The exports were 5,855,722 bales, an increase of 1,055,705 bales. The takings were, by Northern spinners, 1,208,057 bales, a decrease of 159,656 bales; by Southern spinners, 1,185,856 bales, an increase of 96,950 bales.

Eagle & Phenix Mills.

The Eagle & Phenix Mills, Columbus, Ga., will add machinery costing about \$15,000 to double its carding capacity and enable the plant to produce finer goods. Contract for this new equipment has been awarded and the installation is now in progress. The company operates 70,000 spindles and 1900 looms, consuming about 50 bales of cotton daily on the production of colored cottons, denim, ball twine, etc. It was mentioned last week as increasing capital stock by \$250,000, and its capitalization is now \$1,000,000.

The German-American Mill.

Confirming the recent report that it had purchased the German-American mill at Draper, N. C., the Thread Mills Co. writes to the MANUFACTURERS RECORD that no extensions are contemplated except such as will strengthen and maintain the reputation of the plant for high-class products. The property was bid in at \$513,000, and includes modern buildings, 22,032 ring spindles, 5280 woolen spindles, 2040 twister spindles, etc., for manufacturing blankets, knitting yarns, etc.

Westervelt Mills Beginning Operations.

The Westervelt Mills of Greenville, S. C., of which a photographic view was presented in the MANUFACTURERS RECORD of January 11, is now receiving electricity for power and the cars are being clothed with the expectation of starting

some stock into the mill during the present week. This \$1,000,000 company will operate 50,000 spindles and 1200 looms on the production of India lawns and linens.

Royal Woolen Mills.

The Royal Woolen Mills Co. of Hagerstown, Md., has been incorporated with \$10,000 capital stock by W. E. Conner and G. C. Cecil of Parkersburg, W. Va.; John B. Sheets of Wheeling, W. Va., and others.

Woolen Blanket Machinery.

C. R. Merritt of Mt. Airy, N. C., contemplates the establishment of a woolen-blanket plant, and invites data and prices on the necessary machinery.

Textile Notes.

The Gambrill Mills Co. of Hillsdale, Md., has been incorporated by Melville Gambrill, C. I. T. Gould and Charles A. Klots. Its purpose is to manufacture cotton and woolen goods.

The Ellawhite Cotton Mills of Uniontown, Ala., has been sold at \$63,000 to A. L. Morgan and associates, who will operate the plant. This mill is equipped with 10,000 ring spindles, steam-power plant, etc.

The Springfield (Tenn.) Woolen Mills Co. contemplates adding a set of machinery during the next two or three months. It now has four sets 60-inch cards, 40 broad looms, two narrow looms, dyeing and finishing equipment, etc.

MINING

Daily Output of 1000 Tons.

The Spruce Bend Coal Co. of Bend, W. Va., will develop 832 acres of land in Logan county, and estimates that its mines will have a daily output of 1000 tons of coal when the property is fully developed. Machinery has been purchased to begin development. This company was incorporated recently with a capital stock of \$200,000, and it has elected officers as follows: President, P. M. Sharples of West Chester, Pa.; vice-president, Wm. C. Sproul of Chester, Pa.; secretary and treasurer, Isabel Darlington of West Chester; superintendent, Samuel Butler of Bend.

Increasing Clinchfield Coal Output.

The Clinchfield Coal Corporation of Spartanburg expects to substantially increase its output because of the extensive developments that have been in progress for some time, so the company's president, L. S. Evans, telegraphs the MANUFACTURERS RECORD from Dante, Va. Referring to these increases, a dispatch from Johnson City states:

"The Clinchfield Coal Corporation, with a number of mines on the Carolina, Clinchfield & Ohio, and some on the Norfolk & Western, during 1911 increased its production to a point where the output now is 5000 tons per day, while the extension of recent plans will permit of an increase of this output by 50 per cent. by the close of the present year. This will give the company an output of close to 2,500,000 tons by the first of 1913. In an interview a year ago an official of the company said the concern would mine 5,000,000 tons a year at the end of five years, and the present rate of increase looks like it.

"During the past year the company put six new mines on a producing basis, one of which was a shaft mine to the Imboden seam at Dumps Creek. All the development work was not done in a year, it is true, but production was commenced. In

addition to looking after the business end of the coal trade the concern has taken another step toward helping its men, having recently completed a large school building at Dante, which has seats for 160 children. The building is equipped with steam heat and other modern conveniences for the comfort of the children. The building was erected by the coal company and the county is given the use of it for the benefit of the children. Dante has about 200 school children, but all are not regular attendants."

To Develop 500 Acres of Coal.

A daily output of 100 tons of coal is planned by the Lipps Coal Co. of Wise, Va., which was incorporated last week with \$15,000 capital stock. The company has 500 acres of land for development, and it advises the MANUFACTURERS RECORD that prices and data are wanted on gasoline motors for its mines. C. P. Addington is president; W. H. Lipps, vice-president, and M. E. Lipps, secretary and treasurer.

To Mine Virginia Iron.

The Paint Bank Ore Co. of Paint Bank, Va., has been incorporated with \$10,000 capital stock to mine iron ore. G. T. Thayer of Charleston, W. Va., is president; B. Y. Sutherland, vice-president, and C. L. Lemon, secretary-treasurer, both of Paint Rock, Va.

LUMBER

[A complete record of new mills and building operations in the South will be found in the Construction Department.]

To Rebuild Furniture Factory.

The Grace Furniture Co. will rebuild its factory recently destroyed by fire at Salisbury, N. C. Its new building will be of mill construction, costing about \$20,000, and will be equipped with machinery for an annual output of about \$150,000 worth of furniture.

Kaul Company's Tuscaloosa Mill.

The Kaul Lumber Co. of Birmingham is progressing with the preliminary work for the construction of its Tuscaloosa plant. Its buildings will be of steel and concrete, equipped for a rated daily capacity of 175,000 feet of lumber. A 20 to 25-mile railway will be constructed from the mill to timber.

President W. B. Townsend and Secretary Lewis Doster of the Hardwood Manufacturers' Association of the United States announce that at the annual meeting of the association, to be held at Cincinnati January 30-31, everyone connected with the hardwood lumber industry, whether manufacturers, wholesalers or consumers, will be welcome.

Shreveport.

Alert to adopt every means to attract attention to its advantages as a manufacturing center, the Chamber of Commerce of Shreveport, La., E. L. McColgin, secretary, is circulating an illustrated pamphlet giving facts in elaboration of its location as to natural gas, oil and coal, yellow pine, hardwood, glass sand and other materials for manufacturing. The illustrations of the pamphlet alone indicate the character of Shreveport's development, showing as they do the business center, with buildings of modern construction, the up-to-date water-works, the electric-light and power company's plant, gas and oil wells, railway shops and terminals, window-glass plant, cotton compress, iron works, ice plant, creosoting plant and other wood-working establishments.

MECHANICAL

The Ladshaw Multiple Arch Masonry Dam.

The principle of the arch in masonry has been utilized in the design of the Ladshaw Multiple Arch Masonry Dam, patented by Geo. E. Ladshaw, civil and hydraulic engineer, Spartanburg, S. C. Ralph E. Boggs, Spartanburg, is the general licensee, and the dams are constructed by the Multiple Arch Hydraulic Construction Co., Spartanburg. In describing this form of dam construction the inventor states as follows:

"In the construction of this dam we cross a stream in a straight line with a series of arches and pier buttresses following established good practice in every principle involved in the structure. The new ideas and arrangements consist in the employment of a number of arches instead of one large arch; inclining the arches against the piers so as to take advantage of the vertical water pressure, rendering the coefficient of stability constant for any pressure that can come upon the structure and directing the thrust of the water so as to equalize the pressure on the base of the structure and reduce shearing stress to a minimum, at the same time eliminating tension from any part of the structure, all parts being in compression at all times. Another advantage is that the arch is stronger at any point in its height during construction than the high finished wall, and is therefore better able to stand freshets, impact from ice and drift, and a high velocity in the water which may come upon it during construction. For this reason no protection is necessary and no precaution need be taken to prevent freshet water running over the unfinished dam. Cheap labor only is required in construction.

"It is well known to the engineering profession that the shearing of masonry is its next weakest feature after weight. It is partly for this reason that the arches are inclined. If the arches were placed vertical the piers would be the weakest part of the structure and would have to be increased to such extent that there would be no saving in using them. It is not possible to utilize the vertical face and obtain the best results, as is the case with the inclined arch built in series. High dams of every type should have a solid rock foundation. The foundation for piers of this dam should be prepared by blasting and roughing the surface, so there will be no possibility of the structure sliding on its base. The only precaution necessary in preparing the foundation for arches is the removal of all loose and soft stone and filling all open seams or fissures with cement mortar or concrete, well rammed into place. This is also necessary in the case of piers, but a smooth foundation is best for arches."

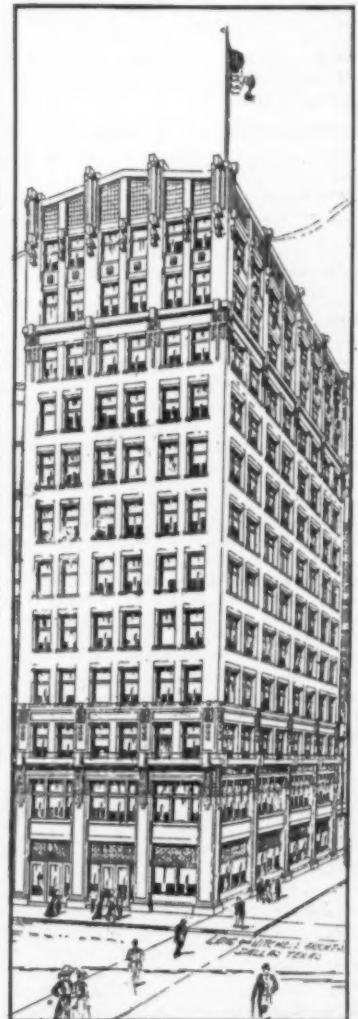
In the construction of this form of dam the arch is not only inclined to the vertical, but is flatter as the construction rises from the base. The top surface of any layer on the arches makes an angle with the horizontal equal to the angle of repose of masonry, so that the arches can be built without centers. If, however, centering is desired, as it is often best and will save time in construction, the construction of the centering is simple and inexpensive. The slant pieces are set to the curvature at the top and bottom of the structure, which gives the differential curvature from top to bottom without measurement at any other points. No steel or other reinforcing is required in this dam.

The saving in expense claimed by the inventor of this type is due not only to the safety during construction and the

cheap labor that may be used, but also to the reduction in the amount of material required as compared with the ordinary gravity dam, at the same time insuring a greater factor of safety. These dams may be built of stone or Portland cement concrete, properly formed, all depending on the local convenience in obtaining these materials.

This design is claimed to be adaptable to hard or soft bottoms, and may be supplied with overfall or spillway section with wall coping and down stream apron and pier fender walls. With soft bottoms the apron is so extended as to protect the soil near the foundation of the piers from washing out. Six dams of this type are now under construction or completed, varying from 30 feet to over 180 feet in height.

The patentee will furnish the designs and specifications for the installation of this dam for hydro-power development, water supply and irrigation purposes. Preliminary designs will be furnished without charge. The builder has had extensive experience in dam building and water-power development.



COMMONWEALTH BANK, DALLAS.

To be erected for Commonwealth National Bank; 12 stories; fireproof steel construction; 53x100 feet; traction type elevator; cost about \$325,000; architects, Lang & Wittchell, Dallas; contractor, Texas Building Co., Fort Worth.

For Wood Distilling.

The National Wood Distilling Co. of Wilmington, N. C., has completed its plant, costing about \$6000, with a daily capacity of two tons of light wood. This is the first commercial demonstration plant under the company's process, and if it is successful its capacity will be increased and other plants will be erected in suitable locations.

Construction Department

TO OUR READERS!

In order to follow up properly the Construction Department items, please bear in mind the following statements:

EXPLANATORY

The MANUFACTURERS RECORD seeks to verify the items reported in its Construction Department by full investigation. It is often impossible to do this before the item must be printed or else lose its value as news, and in some items it is found advisable to make statements as "it is reported" or "rumored," and not as positive information. If our readers will note these points they will see the necessity of the discrimination. We are always glad to have our attention called to errors that may occur.

HOW TO ADDRESS

The name of one or more incorporators of a newly incorporated enterprise should always be shown on letter addressed to the official headquarters or to the town of the parties sought, as may be shown in the item. Sometimes a communication merely addressed in the corporate or official name of a newly established company or enterprise cannot be delivered by the postmaster. By following these general directions the postoffice will be enabled to deliver your mail promptly, although it is inevitable that some failure by the postal authorities to deliver mail to new concerns will occur.

WRITE PERSONAL LETTERS

In communicating with individuals and firms reported in these columns a letter written specifically about the matter reported will receive better and quicker attention than a circular. In most instances a return postal card or addressed and stamped envelope should be enclosed with letter.

In correspondence relating to information published in this department, it will be of advantage to all concerned if the Manufacturers Record is mentioned.

The Daily Bulletin of the Manufacturers Record is published every business day in order to give the earliest possible news about new industrial commercial, building, railroad and financial enterprises organized in the South and Southwest. It is invaluable to manufacturers, contractors, engineers and all others who want to get in touch at the earliest moment with new undertakings, or the enlargement of established enterprises. The subscription price is \$25 per year. On all advertising contracts in the Manufacturers Record for three months or longer a subscription to the Daily Bulletin is included for the contract period.

BRIDGES, CULVERTS, VIADUCTS

Ark., Hot Springs.—St. Louis, Iron Mountain & Southern Railway, E. F. Mitchell, chief engineer, St. Louis, Mo., will construct wagon and foot bridge at Grand Ave.

Fla., Fort Pierce.—St. Lucie County Commissioners will construct bridges, docks and 60 miles of hard-surface roads; bids received February 7. (See "Roads and Streets" and "Machinery Wanted.")

La., New Orleans.—City awarded contract to Midland Bridge Co., Kansas City, Mo., at \$22,900 to construct bascule bridge over Carondelet Walk Canal at Hagan Ave.; Charles R. Kennedy, City Comptroller.

Mo., Joplin.—Missouri, Oklahoma & Gulf Railway, J. J. Harrison, chief engineer, Muskogee, Okla., will construct four steel bridges on railroad from Joplin to Wagoner, across Grand and Spring rivers; contract awarded.

N. C., Goldsboro.—Dr. W. W. Faison, superintendent of State Hospital, awarded contract to Owego Bridge Co., Greensboro, N. C., to construct steel span over Little River near State Hospital; 18-foot driveway, 80 feet long; concrete abutments; cost \$2000. (Recently noted.)

S. C., Greenville.—Greenville county will construct Burns bridge over North Saluda River, three miles from Riverview, and Earle's bridge at Gowansville; bids for former received until January 29, and for latter until January 30; J. P. Goodwin, County Supervisor. (See "Machinery Wanted.")

Tenn., Ducktown.—Polk county will con-

struct bridges near Ducktown; J. Williams, Judge of County Court.

Tenn., McMinnville.—Great Falls Power Co., F. H. Yost, general manager First National Bank Bldg., Nashville, Tenn., plans to construct bridge across Caney Fork on top of its proposed dam 110 feet, also to improve various bridges, etc.

Tenn., Nashville.—Lewisburg & Northern Railroad petitioned Government for authority to construct bridge across Cumberland River, seven miles from Nashville; this is branch of Louisville & Nashville Railroad, W. H. Courtenay, chief engineer, Louisville, Ky.

Tex., Houston.—Harris County Commissioners are considering construction of bridge over Little White Oak Bayou to connect Montgomery and Houston Aves. on straight line; cost about \$15,000.

Tex., Nacogdoches.—City will construct two concrete bridges across Benita Creek, one at Main St. and other at S. Fredonia St.; cost about \$10,000; plans and specifications prepared; City Secretary instructed to invite bids. Address The Mayor.

Va., King George.—Jesse Newton, Supervisor Rappahannock district, will receive bids until February 1 for building approaches to bridge on public road at "Lamb's Creek;" approaches to extend back from bridge 150 feet on each side and be 18 feet at top. (See "Machinery Wanted.")

CANNING AND PACKING PLANTS

Ala., Josephine.—Farmers' Co-operative Canning & Transportation Co. will erect canning factory; 60x100 feet; mill construction; construction by farmers; Fred Biedermann, engineer in charge; daily capacity, 20,000 pounds of fruits, vegetables, fish, oysters, etc. (See "Machinery Wanted.")

Ark., Arkadelphia.—Progressive League is considering proposition to establish cannery with daily capacity of about 20,000 cans.

Fla., Palmetto.—Jas. Mumford and associates are considering establishment of plant to can vegetables, including tomatoes. (See "Machinery Wanted.")

Md., Baltimore.—E. Robinson & Co. incorporated with \$5000 capital stock by Samuel M. Robinson (S. M. Robinson & Co., 607 S. Luzerne St.), Herbert M. Robinson and Everett Robinson.

Md., Springfield.—John Berberick, Bowie, Md., and associates (recently noted to establish cannery) are endeavoring to interest outside parties to locate same.

S. C., Charleston.—Carolina Fish Co. is erecting fishery off Charleston Bar; cost \$3000; Thomas W. Carroll, president; Augustus Hilton, treasurer. (Recently noted incorporated with \$3000 capital stock.)

Tex., San Antonio.—Lone Star Pickle Co. incorporated with \$22,000 capital stock by J. W. Faas, Mrs. Mary Fest, A. J. Kirkpatrick and others.

Va., Portsmouth.—Wainwright-Ayers-Carroll Company incorporated with \$50,000 capital stock; can fish and oysters; T. W. Carroll, president, Charleston, S. C.; F. N. Ayers, vice-president; W. P. Sellers, secretary-treasurer, both of Portsmouth.

CLAYWORKING PLANTS

Ala., Flarhope.—Frank L. Brown is interested in organization of company to install plant to manufacture face, fire and common brick; also hollow brick, fireproofing, drain tile and roofing tile. (See "Machinery Wanted.")

Ga., Columbus.—Bricks.—Shepherd Bros. let contract to Chas. T. Gifford, Columbus, to rebuild structure reported burned; three-story brick building; manufactures common building brick; daily capacity 75,000.

Mo., Moberly.—Brick.—Moberly Paving Brick Co. wires Manufacturers Record: "Will rebuild engine, boiler and factory room with brick and steel." (See "Burned.")

Mo., Pittsburg.—Nell Allen and associates contemplate organizing company to establish brick plant; cost \$25,000 to \$50,000.

Tex., Coleman.—Bricks.—Coleman Vitritified Brick Co. incorporated with \$35,000 capital stock by J. P. Morris, C. C. Frampton and C. A. Morris; purchased and will develop shale deposits; machinery purchased.

Va., Danville.—Brick.—John T. Watson Brick Manufacturing Co. and N. A. and T. J. Fitzgerald have consolidated as Fitzgerald-Watson Brick Co.; capital stock \$75,000; T.

B. Fitzgerald, president; John T. Watson, vice-president.

COAL MINES AND COKE OVENS

Ala., Carbon Hill.—Galloway Coal Co. (main office, Memphis, Tenn.) will rebuild mining plant at Carbon Hill mines recently burned at loss of about \$50,000.

Ala., Nauvoo.—Nauvoo Consolidated Coal Co. will develop 640 acres of land; daily capacity, 150 to 250 tons of coal; R. S. Shook, president; A. S. Tabb, vice-president; E. M. Martin, secretary-treasurer. (Recently noted incorporated with \$12,000 capital stock.)

Ky., Robard.—Panama Coal Co., Henderson, Ky., incorporated to operate property (of Southern Coal Co.) recently noted acquired; 7796 acres of coal rights; 64 acres of surface; O. W. Rash, president; David Banks, vice-president; M. V. Denton, secretary and manager; mine mainly equipped; capacity 500 tons; may install two mining machines within few weeks; also new pan, but size not yet decided. (See "Machinery Wanted.")

Va., Wise.—Lipps Coal Co., C. P. Addington, president (recently reported incorporated with \$15,000 capital stock), will develop 500 acres; daily capacity 100 tons. (See "Machinery Wanted.")

W. Va., Bend.—Spruce Bend Coal Co. will develop 832 acres; estimated daily capacity when fully developed 1000 tons; purchased machinery for present use; president, P. M. Sharples of West Chester, Pa.; vice-president, Wm. C. Sproul of Chester, Pa.; secretary-treasurer, Isabel Darlington of West Chester, Pa.; superintendent, Samuel Butler of Bend. (Recently reported incorporated with \$200,000 capital stock.)

CONCRETE AND CEMENT PLANTS

Fla., Tampa.—Cement Bricks.—John A. Fiske, Cocoa, Fla., contemplates establishing plant to manufacture cement bricks.

COTTON COMPRESSES AND GINS

Ala., Cullman.—The Jaggars Company incorporated with \$25,000 capital stock to establish cotton gin; C. O. Jaggars, president; W. T. Jaggars, vice-president.

Ala., Morrisville.—R. F. D. from Anniston.—T. F. Johnson will build four cotton gins; also saw, lath, shingle, wheat and corn mills; will operate by electricity transmitted from water-power.

Tex., Georgetown.—M. L. King and J. B. Saylor will erect 100-bale cotton gin.

COTTONSEED-OIL MILLS

Ga., Boston.—Boston Oil & Guano Co. incorporated with \$68,000 capital stock by G. C. Cochran and others. (See "Fertilizer Plants.")

Tex., Houston.—Industrial Cotton Oil Co., R. L. Hudgins, general manager, will rebuild cottonseed-oil mill recently reported burned at loss of \$500,000 to \$750,000.

DRAINAGE AND IRRIGATION

La., New Orleans.—Illinois-Louisiana Alluvial Co. chartered with \$100,000 capital stock; Eugene L. Chappuis, president; Ernest J. Conlon, vice-president; William H. Heyl, treasurer.

La., New Orleans.—E. L. Chappuis, president of companies named, wires Manufacturers Record regarding plans for reclaiming land as follows: "Louisiana Alluvial Lands Co., 6000 acres; Alluvial City Land Co., 15,000 acres; Alluvial Land Co., 30,000 acres; total, 51,000 acres wet lands to be reclaimed under 10 subdrainage districts, each approximately 5000 acres, under my control as president and general manager; idea is to locate within five years at least 5000 10-acre farms; cost of reclamation will average \$20 per acre." Lands about 25 miles from New Orleans; developments will include constructing navigable canals, building roads to New Orleans, establishing towns, operating 6000-acre experimental farm, etc. Reports state \$550,000 now ready for beginning developments.

Miss., Robinsonville.—Mary Mae Plantation Co., Kenneth Stevenson, treasurer, executive offices in Falls Bldg., Memphis, Tenn., awarded contracts for completion of drainage of entire plantation, comprising 10,000 acres, to Lewis Engineering & Construction Co., Knoxville, Tenn., at 9½ cents per yard for seven and one-half miles of dredge ditches; to Lowrance Bros. & Co., Memphis, Tenn., at 12 9-10 cents per yard for 63 miles of lat-

eral ditches; Morgan Engineering Co., 610 Goodwyn Institute, Memphis, Tenn., engineer in charge. (Recently noted at Memphis, Tenn.)

Tex., Bay City.—Matagorda County Drainage District No. 3 (recently noted as having made surveys) will receive bids February 15 for construction as set out in report of engineer, G. G. Lovering, Palacios, Tex., engineer in charge of district. (See "Machinery Wanted.")

Tex., Brownsville.—Commissioners Cameron County Drainage District No. 1, G. M. Smith, chairman, awarded contract to International Drainage Co. to construct drainage system; contract calls for construction of three canals, averaging eight miles in length, to converge into main canal about 24 miles long, which will start near Mesquite and empty into Laguna Madre, below Isabel; canals will be from 2½ to 18 feet deep, with average width of from 4 to 20 feet at bottom; drain about 80,000 acres; bond issue of \$201,500 available. (Previously mentioned.)

Tex., Grand Falls.—Consolidated Reservoir Co. is being organized to take over Grand Falls Mutual Irrigation Co., Big Valley Irrigation Co. and Grand Falls Lake & Reservoir Co.; about \$500,000 have been expended, and it is proposed to construct other and larger reservoirs so that entire system will irrigate 62,500 acres; further construction to cost \$500,000 to \$1,000,000; Grand Falls Mutual Reservoir Co. is being organized to take over, operate and maintain completed system; engineers in charge, A. J. Adecock of Grand Falls and Rosecrans Engineering Co., Chicago, Ill. (Lately mentioned.)

Tex., Markham.—Commissioners Markham Drainage District of Matagorda county will soon award contract for construction of drainage canals; \$234,930.13 in bonds available.

Tex., Orange.—E. W. Brown, Mayor, will construct irrigation canal one and one-half miles long about three miles from city.

ELECTRIC PLANTS

Ark., Springdale.—Fayetteville Electric Light & Power Co., Fayetteville, Ark., will construct transmission line from Fayetteville to Springdale, 12 miles, and furnish electricity for street lighting; P. B. Williamson of Fayetteville is chief engineer.

Fla., Madison.—City, R. H. Rowe, Mayor, will take over plant of Madison Electric Light & Power Co. about April 1; no extensive improvements to be made. (Recently noted voting \$30,000 bond issue for purchase of local light and water plants.)

Fla., Tampa.—Tampa Electric Co. increased capital stock from \$1,700,000 to \$1,870,000; will improve plant; George J. Baldwin, president.

Ga., Atlanta.—City is considering construction of electric-light system; will probably provide \$10,000 in annual apportionment sheet to employ engineers to determine cost; R. M. Clayton, chief of construction, states matter has not been taken up by council.

Ga., Darien.—Darien Ice & Light Co. organized with Charles M. Tyson president, secretary and treasurer, and Mayor Bluestein vice-president and general manager; later contemplates addition of electric-light plant to present ice plant. (See "Ice and Cold-storage Plants.")

Ky., Falmouth.—N. C. Ridgeway, Mayor, will receive bids until February 1 for installation of electric-light plant; estimated cost \$7500; Anderson & Frankel, Lexington, Ky., are engineers. (Recently mentioned.)

Ky., Hickman.—Hickman Ice & Coal Co. awarded contract to Allen Engineering Co., Exchange Bldg., Memphis, Tenn., for additional machinery to increase capacity of electric-light plant.

Ky., Murray.—City will issue \$23,000 of bonds for electric-light plant and water-works. Address The Mayor.

Miss., Laurel.—Laurel Light & Railway Co., S. M. Jones, secretary (previously reported incorporated with \$500,000 capital stock), purchased light plant formerly owned by Gulf States Investment Co.; will enlarge machinery department; details to be announced later.

Mo., Kansas City.—La Plata Ice, Heat & Power Co. incorporated by G. A. Stickler and others. (See "Ice and Cold-Storage Plants.")

Mo., Lincoln.—Lincoln Electric Co., W. C. Cain, president, will expend \$3000 to erect electric-light plant; 25 horse-power; building

50x20 feet; frame; contract closed. (See "Machinery Wanted.")

Mo., Fredericktown.—Fredericktown Light & Power Co. incorporated with \$15,000 capital stock by E. K. Gates, A. J. Boardman and R. G. Stevenson.

Mo., Mexico.—Mexico Power Co. incorporated with \$300,000 capital stock by S. M. Locke, E. K. Locke and P. E. Locke.

N. C., Littleton.—City will construct electric-light plant; \$10,000 of bonds issued; T. J. Miles, Mayor.

Okla., Forum.—Township will construct electric-light plant; M. A. Earl & Co., 725 Flynn-Ames Bldg., Muskogee, Okla., are engineers; E. W. Sanders, township clerk.

S. C., Greenville.—Piedmont Traction Co., Charlotte, N. C., wires Manufacturers Record: "Greenville addition to present transformer station 50x70 feet; contains two 500-kilowatt motor generators for interurban railway, transformers, switchboards, etc.; building of concrete unit brick with fireproof roof." Also referring to this addition, J. W. Fraser of company writes: "This is one of 10 substations we are building for operation of Piedmont and Northern lines; substations being built by our own engineers; Westinghouse Electric & Manufacturing Co. of Pittsburgh furnishing the machinery."

S. C., Sumter.—Sumter Lighting Co. will expend about \$25,000 in further improvements to plant, including erection of office building and installation of 750-horse-power turbine engine directly connected with electric generator.

Tenn., Dyer.—Dyer Fruit Box Manufacturing Co. awarded contract to Allen Engineering Co., Exchange Bldg., Memphis, Tenn., for machinery to increase capacity of electric-light plant.

Tex., Baird.—Baird Light & Ice Co. will erect 60x30-foot, 30x40-foot and 30x20-foot buildings; machinery will include 75-kilowatt generator, engine and ice machine; P. A. Heeger, president and treasurer; W. W. Wedebon, vice-president; E. W. Smith, secretary and manager. (Recently noted incorporated with \$20,000 capital stock.)

Tex., Dallas.—Texas Electric Co. incorporated with \$100,000 capital stock to promote and construct electric-light and power plants, street and suburban railways, etc.; J. V. Watkins, president; R. M. Nunley, vice-president; E. H. Conibear, secretary; A. Ragland, treasurer.

Tex., Grand Prairie.—Grand Prairie Electric Light & Ice Co. incorporated with \$10,000 capital stock by J. E. Payne, E. E. Leasley, E. M. Henley and others.

Tex., Port Arthur.—Port Arthur Water Co. will install turbine generator with capacity of 1000 kilowatts; present capacity 900 kilowatts; will also install battery of boilers for turbine.

Tex., Port Lavaca.—W. E. Shell & Co. (recently noted as receiving franchise) state electric plant is complete and ready for operation. (See "Water-works.")

Tex., Winters.—Winters Light & Milling Co. incorporated with \$10,000 capital stock by J. L. Alfred, A. F. Roberts and A. K. Doss.

Va., Lawrenceville.—D. S. Hicks, Jr., Mayor, states that recently-noted bond issue for electric plant has been disapproved on account of legal technicality.

Va., West Point.—People's Light, Heat & Power Corporation, C. L. Maskey, president, will improve power-house and install equipment.

W. Va., Marlinton.—Marlinton Service Co. is organized to take over electric-light plant and water-works of Marlinton Light & Water Co.; recently noted incorporated with \$30,000 capital stock by John Alexander, J. L. Hechmer, Grafton, W. Va., and others. (See "Water-works.")

W. Va., Moundsville.—Moundsville Electric Co. will install additional machinery, including dynamos; cost about \$50,000.

FERTILIZER FACTORIES

Ga., Boston.—Boston Oil & Guano Co. incorporated with \$68,000 capital stock by G. C. Cochran, F. S. Perry, O. P. Walton and O. O. Worley.

La., Shreveport.—Virginia-Carolina Chemical Co., Richmond, Va., is reported as to build \$75,000 sulphuric acid plant; has plans for large building; W. F. Zimmerman, Shreveport, superintendent.

S. C., Nitrolee.—Nitric Acid.—Southern Electro-Chemical Co. of Charlotte, N. C., and 111 Fifth Ave., New York (A. H. Burroughs, president), has in view construction of nitric-acid plant to utilize about 20,000 electrical horse-power; will soon complete initial plant (previously announced), using 400 electrical horse-power, with 24-hour capacity of five tons nitric acid.

FLOUR, FEED AND MEAL MILLS

Ala., Morrisville, R. F. D. from Anniston.—T. F. Johnson will build corn and wheat mills. (See "Cotton Compresses and Gins.")

Tenn., Memphis.—John Wade & Sons will erect feed mill and enlarge grain elevator.

Tenn., Nashville.—J. A. & O. L. Jones Mill & Elevator Co. incorporated with \$50,000 capital stock by John A. Jones, O. L. Jones, John T. Allen and others.

FOUNDRY AND MACHINE PLANTS

Ala., Birmingham.—Radiators.—American Radiator Co., Chicago, Ill., will, it is reported, build \$1,000,000 plant.

Ala., Birmingham.—Stoves.—Eureka Stove Works increased capital stock from \$35,300 to \$50,000, and will rebuild burned plant; buildings will include foundry, erection shop, storehouse, office and pattern-room and stables; John W. O'Neill, president.

Ala., Montgomery.—Gas Engines.—R. L. Brown, Springfield, O., and associates contemplate establishing gas-engine plant.

D. C., Washington.—Bureau of Yards and Docks, Navy Department, Washington, D. C., will receive bids until 11 A. M. February 17 for erecting foundry building at navy-yard, Washington; plans and specifications can be obtained on application to bureau; deposit of \$25 required to secure plans and specifications; R. C. Hollyday, chief of bureau.

La., Vivian.—Foundry.—Oil City Machinery Co. will not build foundry. (Recent report incorrect.)

Machine.—Myers-Whaley Company increased capital stock from \$50,000 to \$150,000 to provide for increased capacity of plant.

Tex., Dallas.—Machinery.—Briggs-Weaver Machinery Co. increased capital stock from \$120,000 to \$300,000.

Tex., Fort Worth.—Gas Machines.—Oxine Gas Manufacturing Co. incorporated with \$25,000 capital stock by T. B. Yarbrough, William Bryce and Amon G. Carter to manufacture machines for manufacturing gas.

GAS AND OIL DEVELOPMENTS

La., Alexandria.—Rapides Gas & Oil Co. organized with \$25,000 capital stock to drill for oil and gas on 60-acre tract in Kent addition to Alexandria; also acquired salt-water well and natatorium; A. V. Nelson, president; Stephen Barrett, vice-president; W. J. Hill, secretary-treasurer.

Okla., Davis.—New Mid-Continent Oil Co. (recently noted incorporated) will make developments; \$250,000 capitalization; incorporators are C. B. Vaughan, C. B. Ramsey and E. A. Hill; company and incorporators own about 30,000 acres oil and gas lease in Southwestern and Central Oklahoma; connected with Oklahoma-Electra Oil Co., these two companies controlling Honey Creek Syndicate, Arbuckle Syndicate, Pool, Davis & Turner Falls Railway Co., etc.

Okla., Tulsa.—St. Louis Oil & Gas Co. incorporated with \$10,000 capital stock by S. S. Mohrman, W. H. Dodd and G. C. Simmons.

Tex., Fort Worth.—National Oil Co. incorporated with \$10,000 capital stock to develop

mining organization of company. (See "Machinery Wanted.")

Md., Havre de Grace.—Havre de Grace Electric Co., J. Hayward Harlow, president, 3 E. Lexington St., Baltimore, Md., is considering installation of 10-ton ice machine in connection with electric plant.

Miss., Greenville.—J. W. Dennis will establish cold-storage plant; erect two-story brick building.

Mo., Kansas City.—La Plata Ice, Heat & Power Co. incorporated with \$25,000 capital stock by G. A. Sicker, R. J. Laflite and H. J. Mairiens.

N. C., Salisbury.—Catawba Ice & Storage Co., J. W. Hines, president, will erect 75-ton ice and 400-ton cold-storage plants at Salisbury and Spencer, N. C. (See Spencer, N. C.)

N. C., Spencer.—Catawba Ice & Cold-Storage Co., J. W. Hines, president, will establish 75-ton ice and 400-ton cold-storage plants at Salisbury and Spencer, N. C.; fireproof construction; install 25-kilowatt dynamos; electric elevator; plans by D. J. Rose, Rocky Mount, N. C.; T. M. Hines, care of Rocky Mount Ice & Fuel Co., Rocky Mount, N. C., may be addressed. (Mr. Hines recently noted interested in organization of company to erect ice plant. See "Machinery Wanted.")

Okla., Elk City.—Elk City Ice & Fuel Co. incorporated with \$30,000 capital stock by W. T. Harvard, A. E. Fritschle and W. E. Corn.

S. C., Columbia.—City awarded contract to Brecht Company, Cincinnati, O., to furnish and install equipment and refrigerating plant and abattoir; W. H. Gibbs, Mayor. (See "Miscellaneous Enterprises.")

Tex., Baird.—Baird Light & Ice Co., P. A. Heeger, president, will erect 60x30-foot, 30x40-foot and 30x20-foot buildings; machinery will include ice machine, engine and 75-kilowatt generator. (Recently noted incorporated.)

Tex., Brownsville.—Consumers' Ice & Cold Storage Co. awarded contract to erect plant; 150x50 feet; brick; cost \$25,000; D. McLendon, engineer in charge; cost of machinery (purchased), \$15,000; daily capacity, 25 tons of ice. (Recently noted organized by L. B. Puente and others.)

Tex., Port Arthur.—Port Arthur Water Co. will increase capacity of ice plant.

Tex., Grand Prairie.—Grand Prairie Electric Light & Ice Co. incorporated with \$10,000 capital stock by J. E. Payne, E. E. Leasley, E. M. Henley and others.

Va., Norfolk.—Anheuser-Busch Brewing Association will erect addition to ice and cold-storage plant; addition to be of concrete and fireproof; new elevators; addition to contain 150,000 cubic feet for cold storage; plans by Widmann & Walsh, St. Louis, Mo.

W. Va., Marlinton.—Marlinton Service Co. (recently noted incorporated with \$30,000 capital stock by John Alexander, J. L. Hechmer, Grafton, W. Va., and others) will erect ice plant; probably 10 tons capacity. (See "Water-works.")

IRON AND STEEL PLANTS

Ala., Birmingham.—Iron and Steel.—Billings Process Co. incorporated with \$1,000,000 authorized capital stock and main office at 201 Woodward Bldg.; C. W. Hill and J. R. Billings are interested. Mr. Hill writes to Manufacturers Record company will hold certain patents in making iron and steel; process is chemical and carried out at blast furnace; it is claimed to make coke pig-iron stronger, softer and practically without blowholes; arrangements completed to begin manufacture in quantity, and expect to have product on market within 90 days.

Ala., Sheffield.—Iron Furnace.—Sloss-Sheffield Steel & Iron Co., Birmingham, Ala., will overhaul and repair blast furnace recently noted; no additional machinery; will repair present machinery and boilers, reline stack and stoves, and construct new trestles in stockhouse; reports state company will expend \$99,000 at Sheffield furnace, \$7500 at Flat Top, \$20,000 at North Birmingham and \$20,000 at Birmingham.

LAND DEVELOPMENTS

Florida.—Florida Land & Fruit Co. chartered with \$50,000 capital stock by J. M. Patterson, J. Sloan and W. G. Markell of Pittsburgh, Pa.

Fla., Jacksonville.—James A. Mandeville and Edward Adams of Newark, N. J., are reported to have purchased 20,000 acres Duval and Nassau county land at about \$200,000 for development.

Fla., Pensacola.—Stillman Land Co., John E. Stillman, president, has 1400 acres of land; contemplates establishing manufacturing suburb, developing trucking farms, etc. (Recently noted incorporated with \$50,000 capital stock.)

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Md., Baltimore.—Machinery.—Ellicott Machine Co., Bush and Severn Sts., will erect additional building to plant; one story; 50x160 feet; structural iron; concrete foundation; slag roof; concrete and sheet-metal flooring; construction in charge of Chesapeake Iron Works, Bayard and Severn Sts.

Md., Baltimore.—Auto Plows.—Thompson Breese Auto Plow Co., Wapakoneta, O., is reported as planning to establish works. Company wires Manufacturers Record: "Need one-story building, 80x350 feet; will employ 150 men; demand for auto plow largely exceeds our present capacity; Baltimore is splendidly situated for our factory for home and foreign demands."

Mo., St. Louis.—Iron Doors and Fire-escapes.—George W. Johnson Manufacturing Co., Kansas City, Mo., purchased three-story brick factory building at 1210 S. 8th St. for \$10,000, and will equip for manufacturing iron doors and fire-escapes.

Okla., Tulsa.—Boilers.—Tulsa Boiler & Manufacturing Co., J. E. Carnahan, president, Canton, O., will improve plant.

S. C., Greenville.—Palmetto Iron Works will erect brick building to cost about \$1500; engaged Joseph T. Lawrence as architect and builder. (Company recently reported incorporated with \$25,000 capital stock by J. S. Conrad and associates.)

S. C., Greenwood.—Foundry, etc.—Greenwood Foundry & Machine Co. (F. J. Milam, J. L. and D. K. Gaffney) has contracted for addition; 55x65-foot galvanized sheet-iron structure; all equipment ordered; will conduct foundry and general machine shop. (Previously noted.)

Tenn., Knoxville.—Tunneling and Moving

wells in Electra oil field; J. M. Ware, president; H. A. Turner and J. H. Hislop, vice-presidents; H. I. Gahagan, secretary; T. W. Slack, treasurer.

W. Va., Buckhannon.—Riverside Oil & Gas Co. incorporated with \$10,000 capital stock by C. S. Holden and U. I. Jenkins of Buckhannon, W. A. Jackson of Jane Lew, W. Va., and others.

W. Va., Parkersburg.—Nina Oil & Gas Co. incorporated by L. C. Pritchard, W. C. Clayton, L. W. Reitz, E. A. Mead and others.

ICE AND COLD-STORAGE PLANTS

Ark., Rogers.—Rogers Ice & Cold Storage Co. will increase capacity of plant from 20 to 40 tons of ice every 24 hours; machinery ordered.

Fla., Bradentown.—Excelsior Ice Co. of Manatee and Tarpon Springs, Fla., awarded contract to H. L. Ringo, Manatee, to erect buildings recently noted; corrugated galvanized sheet-iron structures; 26x33 and 25x40 feet; cost about \$2500; machinery supplied; H. W. Lind, manager.

Ga., Darien.—Darien Ice & Light Co. organized with Charles M. Tyson president, secretary and treasurer, and Mayor Bluestein vice-president and general manager; has purchased and improved plant; later contemplates addition of electric-light plant to furnish light to city, business houses and residences.

Ga., Greensboro.—Greene County Dairymen's Association, R. J. Austin, manager, will open bids at once to erect ice plant and milk depot; ordinary construction; daily capacity 10 tons of ice and about 1000 gallons of milk; Mr. Austin recently noted as pro-

Fla., Pensacola.—H. S. Hallman, Berlin, Ontario, Canada, advises the Manufacturers Record plans are not completed for colonization and development of land in Walton county recently noted purchased by Mr. Hallman and W. M. Cram of Berlin.

Ga., Macon.—Morris Brown College, Atlanta, Ga., purchased 632 acres on Clinton Rd.; will divide portion of property into lots and develop as negro settlement. (See "Schools.")

La., New Orleans.—Stanton Planting & Manufacturing Co. incorporated with \$75,000 capital stock to develop rice and sugar plantations and operate manufacturing plants; Charles A. Farrell, president; William B. Grant, vice-president; Emile H. Reynes, secretary-treasurer.

Miss., Hattiesburg.—E. A. Cummings & Co., 40 N. Dearborn St., Chicago, Ill., are proceeding with developments of previously-noted cut-over lands of J. J. Newman Lumber Co. between Hattiesburg and Sumrall; surveys being made; some land has been sold in tracts of 80 acres or less; farming and truck gardening contemplated by purchasers; stock raising (hogs and cattle) also considered.

Mo., Clayton.—St. Louis Country Club purchased 227 acres, of which about 150 acres will be improved for club grounds and about 75 acres sold for residential purposes. (See "Miscellaneous Structures.")

Mo., Crystal City.—Crystal City Real Estate & Development Co. incorporated with \$2000 capital stock by Frits Steger, Leon Herrick and G. N. Jolly.

Mo., Kansas City.—Byrne-Waddill Dominion Land Co. incorporated with \$50,000 capital stock by J. E. Waddill, John M. Byrne and others.

Mo., St. Louis.—Gratlot-Wielms-Botts Construction & Realty Co. incorporated with \$10,000 capital stock by Charles J. Gratlot and others. (See "Miscellaneous Enterprises.")

N. C., Jackson Springs.—Pioneer Farm incorporated with \$100,000 capital stock by Dallas D. L. McGrew, Roger A. Derby and others.

Okla., Hobart.—City voted \$100,000 bond issue for parks, city hall and water-works. Address The Mayor.

S. C., Columbia.—Y. R. Scruggs purchased nine acres for \$7500 and will improve.

Tex., Houston.—North Houston Development Co. incorporated with \$2000 capital stock by H. S. Taylor, L. M. Blake, J. R. Stephenson and others.

Tex., Rio Hondo.—Rio Hondo Co. incorporated with \$100,000 capital stock by E. H. Smith, William H. Morrison, F. P. Foley and others.

Va., Warrenton.—T. S. Vance Company, T. S. Vance, manager, will develop orchards; controls 1202 acres in Fauquier county and expects to plant 100-acre apple orchard and 50-acre peach orchard in spring.

W. Va., Charlestown.—Alabama Realty Co. incorporated with \$50,000 capital stock by R. L. Walker, Bradford Noyes, R. A. Young and others.

W. Va., Keyser.—Eastern Panhandle Orchard Co. chartered with \$500,000 authorized capital by E. V. Romis, John T. Sincell and H. L. Arnold of Keyser, W. W. Giffin of Pittsburgh, Pa., and W. S. Bell of Philadelphia, Pa.; company wires Manufacturers Record: "Propose purchase of 336-acre orchard containing 28,000 apple trees, 840 peach trees two to six years old; also 200 acres unimproved; propose to develop whole tract."

LUMBER MANUFACTURING

Ala., Fairhope.—Frank L. Brown will not erect sawmill at his brick and pottery plant. (Recently noted at Marlow, Ala.)

Ala., Tuscaloosa.—Kaul Lumber Co., Birmingham, Ala., is proceeding with preliminary work of sawmill construction; mill of steel and concrete construction; daily capacity about 175,000 feet lumber. (Plans previously noted to include 20 to 25-mile railroad from proposed mill site to timber.)

Ala., Morrisville.—R. F. D. from Anniston.—T. F. Johnson will build saw, bath and shingle mills. (See "Cotton Compresses and Gins.")

Ark., Helena.—Delta Land Co. purchased recently-noted 30,000 acres of land in Desha and Phillips counties; cost \$400,000. A. Maas, Memphis, Tenn., wires Manufacturers Record that timber on land will be logged by Arkansas Loggin Co., headquarters in Memphis; T. W. Saffie to have charge of logging operations; 11-mile steel tramway extending from M. & L. Railroad to Jarbo Spur will be laid, and negotiations for laying this track are now being made; additional mills

will probably be installed; land to be developed for farming after timber is cut.

Ky., Louisville.—Winterbotham & Sons, Chicago, Ill., purchased, for \$40,000, timber on 2500 acres along Frozen Creek and North Fork of Kentucky River.

La., Opelousas.—The Kern Company of New Orleans, La., purchased, for \$26,000, timber on Mount Hope plantation of Mount Hope Plantation & Land Co.; reported land will be colonized after timber is removed.

Miss., Pelahatchie.—Pelahatchie Planing Mill Co. incorporated with \$10,000 capital stock by J. P. Culpepper, J. J. Walker, T. E. Waldrup and others.

Miss., Smedes.—R. E. Walter will erect sawmill; capacity, 20,000 feet; purchased 4000 acres of timber land.

N. C., Greensboro.—South Atlantic Lumber Co., W. L. Clement, secretary, will double capacity of plant; present capacity, one carload daily; leased Piedmont Lumber Co.'s plant and will probably erect addition.

N. C., Zebulon.—W. S. Wilson Lumber Co. incorporated with \$100,000 capital stock by W. S. Wilson, Elmo A. Metcalf, Carrie M. Wilson and W. B. Whiteside.

Tenn., Sevier County.—Miller Lumber Co., Knoxville, Tenn., states recently-noted timber purchase was for about 500 acres, principally hardwoods, about seven miles from railroad; will not build mill for this development, but will contract logging and sawing; about to close deal for 3000 acres virgin timber in same locality, latter tract to be operated or sold.

Tenn., Monterey.—Woodcliff Lumber Co. purchased 1000 acres of timber land and will develop; tract estimated to contain 5,000,000 feet of oak, poplar and chestnut; purchase includes 20,000-foot daily capacity band mill; purchasers will construct spur track to mill from Monterey and narrow-gauge road to lumber tract. (Company recently reported incorporated with \$50,000 capital stock by Hugh McIlvaine and others.)

Tex., Palestine.—Wherry Bros. will erect planing mill.

METAL-WORKING PLANTS

Ark., Paragould.—Pins.—Hicks Bros. will rebuild drykiln (at pin mill) recently burned at loss of about \$30,000.

Okla., Tulsa.—Tanks.—Oklahoma Metal Tank Co. incorporated with \$100,000 capital stock by Charles E. Delos, William C. Guller and Elmer L. Wetherbee.

MINING

Ala., Birmingham.—Sand, etc.—Kirkpatrick Sand & Cement Co., 501 Woodward Bldg., Birmingham, Ala., awarded contract to Evans Bros., Birmingham, for necessary repairs to plant. (Recently noted burned.)

Ala., Birmingham.—Granite.—L. H. Hulett, Rutland, Vt., leased granite quarries and will develop; will construct \$20,000 plant.

Ala., Talladega.—Marble.—C. J. Harrah of Cuba, care of Wm. J. Conniff, Birmingham, Ala., contemplates developing marble deposits; now testing by drill.

Mo., Carthage.—Lead and Zinc.—C. C. Smith, J. Eastridge, W. H. Roper, John Eckman and E. C. Kipling have organized company to develop 35 acres lead and zinc land.

Mo., Galena.—Lead and Zinc.—Wilson & Steady will, it is reported, build concentrating plant.

Mo., Webb City.—Lead and Zinc.—Morgan Forty Mining Co. organized by S. Y. Ramage and others; will erect concentrating plant.

Tenn., Newmarket.—Lead and Zinc.—Grassell Chemical Co., Cleveland, O., will double output of Lay mine; has completed mill recently under construction.

Va., Paint Bank.—Iron.—Paint Bank Ore Co. incorporated with \$5000 capital stock; C. T. Thayer, president, Charleston, W. Va.; C. L. Lemon, vice-president, Paint Bank.

MISCELLANEOUS CONSTRUCTION

Ala., Mobile.—Coaling Facilities.—Pratt Consolidated Coal Co., Birmingham, Ala., will construct facilities for coaling vessels.

Fla., Fort Pierce.—St. Lucie County Commissioners will construct docks, bridges and 60 miles of hard-surface roads; bids received February 7; bond issue, \$200,000. (See "Roads and Streets" and "Machinery Wanted.")

Fla., St. Petersburg.—Dock.—City will construct dock on water front; 100 feet long and 16 feet wide. Address The Mayor. (Previously mentioned.)

Fla., Tampa.—Dry-dock.—Warren Fish Co. will construct marine railway or dry-dock west of Baylen St. wharf; capacity 300 tons; contract for driving piling awarded to Chas. H. Villar.

Mo., St. Charles.—Revetment.—Dewitt & Shobe, contractors, Glasgow, Mo., are proceeding with construction of previously-noted Government revetment; 11,000 linear feet; approximate cost \$85,000; Edward H. Schulz, Major, Engineers, Kansas City, Mo.; all materials purchased.

Okla., Tulsa.—Subway.—St. Louis & San Francisco Railroad, F. G. Jonah, chief engineer, St. Louis, will, it is reported, construct 30-foot subway at intersection of tracks with Peoria St.; cost \$5000.

Tex., El Paso.—Herbert Nunn (City Engineer), Felix Martinez, R. F. Burgess and others are promoting organization of irrigation district to construct roadway and levee along Rio Grande to protect adjoining land from overflow; El Paso county will vote on \$200,000 bond issue.

Va., Newport News.—Harbor.—City contemplates building harbor at Newport News and Salter's Creek; R. T. Pierce of Alsop & Pierce, Newport News, prepared plans, and estimates cost of harbor at Salter's Creek at \$67,000.

MISCELLANEOUS ENTERPRISES

Ala., Birmingham.—Roofing and Heating.—Spire Roofing & Heating Co. incorporated with \$4100 capital stock by J. H. Hahn, W. R. Foreman and Jones Spiro.

Ala., Birmingham.—Printing and Engraving.—Bell Printing Co. incorporated with \$6000 capital stock to establish printing and engraving plant; Wyllys Roberts, president; W. S. Bell, secretary-treasurer.

Ala., Demopolis.—Abattoir.—City will construct abattoir; Jesse B. Hearin, Mayor.

Ark., Fort Smith.—Laundry.—Fairview Land & Cattle Co. incorporated with \$30,000 capital stock by William Caphs, W. B. Townsend and Claude C. Hayes.

Tex., Seguin.—Publishing.—Seguiner Zeitung Publishing Co. incorporated with \$5000 capital stock by Edwin Eberhard, H. E. Eberhard and Emil Halm.

Tex., Wellington.—Printing.—Leader Printing Co. organized with J. D. Camp, president; Thomas Durham, secretary-treasurer; will conduct printing plant; cost of machinery \$4000; building erected. (Recently noted incorporated with \$6000 capital stock.)

Fla., Mulberry.—Publishing.—Mulberry Publishing Co. organized with \$3500 capital stock; will build printing plant; A. S. McKellogg, president; W. P. Reed, vice-president; A. D. West, secretary-treasurer; E. S. Fenerrecht, general manager.

Ga., Athens.—Cloth Measuring.—Computing Cloth Measuring Co. incorporated with \$30,000 capital stock by M. G. Nicholson, A. T. Conway, P. L. Smith and others.

Ga., Greensboro.—Milk Depot.—Greene County Dairymen's Association, R. J. Austin, manager, will open bids at once to erect milk depot, etc. Mr. Austin recently noted as promoting organization of company. (See "Ice and Cold-Storage Plants.")

Ga., Rome.—Silver Plating.—E. P. McGhee contemplates installing small silver-plating plant. (See "Machinery Wanted.")

La., New Orleans.—Construction.—Chatham Construction Co. incorporated with \$20,000 capital stock by Harry K. Johnson, R. S. Stearnes, Erskine W. Fisher and Victor C. Smith.

Md., Baltimore.—Contractors' Supplies, etc. Brooks-Ward Supply Co. incorporating with \$5000 capital stock; Walter B. Brooks, Jr., president; Gaylord Brooks, secretary; Thomas M. Ward, manager; office address, 24 Commerce St.

Md., Gaithersburg.—Baling Plant.—Thomas I. Fuke awarded contract to Phebus & Ward to erect 20x26-foot frame addition to baling plant; will not rebuild structure recently reported burned.

Miss., Jackson.—Printing.—Tucker Printing House will rebuild printing plant recently burned at loss of about \$58,000.

Mo., St. Louis.—Construction.—Gratlot-Wielms-Botts Construction & Realty Co. incorporated with \$10,000 capital stock by Charles J. Gratlot, Edward P. Wielms, William P. Botts and E. S. French.

N. C., Littleton.—Hardware.—Cole-Tarry Hardware Co. incorporated with \$4000 capital stock by M. L. Cole, T. W. Cole and H. B. Tarry.

N. C., Thomasville.—Printery.—Davidsonian Publishing Co. chartered with \$25,000 capital stock by D. C. McRae, L. A. Martin and Archibald Johnson.

N. C., Tryon.—Laundry.—W. Heatson contemplates establishing steam laundry. (See "Machinery Wanted.")

Okla., Muskogee.—Building.—Court Building Co. incorporated with \$150,000 capital stock by T. H. Martin, Charles W. Reid, J. N. Wilson and others.

S. C., Columbia.—Abattoir.—City awarded contract to Gus V. Brecht Butchers' Supply Co., St. Louis, Mo., at about \$15,000 to furnish and install equipment for abattoir and re-

frigerating plant; provide for 70 animals per day of 12 hours; 50 per cent. cattle and 50 per cent. hogs, sheep and calves; city will erect brick building, costing \$11,000 or \$12,000, according to plans by contractor; total cost about \$26,000; W. H. Gibbs, Mayor. (Call for bids lately noted.)

Tenn., Bristol.—Laundry.—Bristol Laundry Co. organized with \$10,000 capital stock by Jesse L. Nave, J. C. Sasher and C. J. Todd; consolidates American Steam Laundry and City Steam Laundry.

Tenn., Bristol.—Hardware and Supplies.—Interstate Hardware & Supply Co. incorporated with \$100,000 capital stock by James A. Stone, H. E. Jones, James F. McCrary, James T. Cecil and W. R. Stone; succeeds Virginia-Tennessee Hardware Co.

Tenn., Knoxville.—Plumbing.—James C. McLaughlin Company incorporated with \$10,000 capital stock by James C. McLaughlin and others.

Tenn., Memphis.—Grain Elevator.—John Wade & Sons will enlarge grain elevator and erect feed mill.

Tenn., Nashville.—Railroad Contracting.—Walton-McDowell Company, Brentwood, Tenn. (recently reported incorporated with \$50,000 capital stock), elected J. R. McDowell, president; J. E. Rodes, vice-president, treasurer and secretary; E. V. Rawn, general manager; has been awarded 19½ miles excavation and masonry contract on Lewisburg & Northern Railroad; work requires five or six steam shovel plants and several masonry plants; 18 months allowed for completion; may let portion of steam shovel work. (See "Machinery Wanted.")

Tex., Fort Worth.—Land and Cattle.—Fairview Land & Cattle Co. incorporated with \$30,000 capital stock by William Caphs, W. B. Townsend and Claude C. Hayes.

Tex., Seguin.—Publishing.—Seguiner Zeitung Publishing Co. incorporated with \$5000 capital stock by Edwin Eberhard, H. E. Eberhard and Emil Halm.

Tex., Wellington.—Printing.—Leader Printing Co. organized with J. D. Camp, president; Thomas Durham, secretary-treasurer; will conduct printing plant; cost of machinery \$4000; building erected. (Recently noted incorporated with \$6000 capital stock.)

MISCELLANEOUS FACTORIES

Ala., Atmore.—Turpentine.—Crosby Turpentine Co. incorporated with \$8000 capital stock by T. W. Crosby, W. D. McCoy and W. H. McCoy.

Ala., Birmingham.—Coal-tar Distilling Plant. Barrett Manufacturing Co. of 17 Battery Pl., New York, and Birmingham, Ala., has appropriated \$250,000 to build and equip distilling plant; company manufactures coal-tar products. (Mentioned in November as having purchased 31-acre site.)

Ala., Birmingham.—Cut Stone.—Mr. Melcher is planning improvements to plant of Alabama Cut Stone Co. which will double capacity.

Ala., Birmingham.—Syrups and Beverages.—Henley Ala-Cola Co. incorporated with \$60,000 capital stock; C. D. Henley, president; H. N. Brannon, vice-president; C. F. Bell, secretary-treasurer.

Ala., Birmingham.—Paint.—American Paint Manufacturing Co. incorporated with \$2000 capital stock; Alan L. Johnson, president; Elmer Hickey, general manager.

Ala., Bon Secour.—Turpentine.—Home Turpentine Co. incorporated with \$6000 capital stock by W. R. Miller, J. H. A. Miller and William F. Krause.

Ala., Gadsden.—Laboratory.—Whorton Pharmaceutical Co. organized with \$10,000 capital stock by Carl Whorton and others; will establish laboratory to cost about \$2500.

Ark., Hot Springs.—Gas Burner.—John Austin and James F. Smith will establish plant to manufacture gas burner.

Ala., Mobile.—Mobile Palm Oil Co. increased capital stock from \$10,000 to \$20,000.

Ala., Mobile.—Harness.—Mobile Harness Co. incorporated with \$4000 capital stock by M. L. Johnson, V. V. Johnson and D. T. Shepherd.

Ala., Montgomery.—Carpet Sweepers.—Vine Land Machine & Tool Co., Philadelphia, Pa., contemplates establishing carpet-sweeper factory.

Fla., Moline.—Turpentine, etc.—Florida Pine Products Co., M. P. Brownson, president, will erect 12x40-foot and 24x50-foot buildings; ordinary construction; company will erect machinery will include pine products retorts, engine, etc.; daily capacity 10 cords of pine products. (Recently reported incorporated with \$5000 capital stock.)

Fla., Largo.—Syrup.—Largo Syrup Co. in-

corporated with \$2000 capital stock; M. W. Palmer, president; R. L. McMullen, Louis S. Johnson, E. A. St. John (Columbus, O.) and Sarah Colton Smith, vice-presidents; John S. Taylor, treasurer; R. E. Flicher, secretary.

Ga., Rome—Patented Novelties.—Espe Manufacturing Co. incorporated with \$10,000 capital stock by John R. Jones, T. R. Garlington and Lewis R. Smith.

Ky., Louisville—Gas.—Southern Blau Gas Co. organized; president, Henry Terstegge; vice-president, Geo. C. Fetter; treasurer, H. Green Garrett, Winchester, Ky.; wires Manufacturers Record that company will erect six-unit brick and steel plant costing about \$200,000; this includes building, machinery and equipment; detailed plans not yet ready for announcement; location of plant not decided; may be some other city in Kentucky or Tennessee; proposed capacity at least 600 bottles daily; company will have authorized issue of \$500,000 preferred and \$1,500,000 common stock; operate principally in Kentucky and Tennessee; is subsidiary of Blau Gas Co. of America. (Previously noted.)

Ky., Louisville—Cloaks and Suits.—Gibson Suit & Cloak Co. incorporated with \$15,000 capital stock by Max I. Greenstein, Joe R. Lewis and others.

Ky., Maysville—Pulleys.—Ohio Valley Pulley Works (recently noted) incorporated with \$50,000 capital stock by E. P. Browning and associates) continues operation of established plant.

Ky., Newport—Soap.—M. B. Kendrick Company, 15 Bradford Bldg., Covington, Ky. (recently noted) incorporated, will establish plant to manufacture soap compounds and soap; daily capacity 2500 boxes; location not decided; now using old plant of M. B. Kendrick & Co. at Newport; M. B. Kendrick, president and manager; S. K. Kautzmann, vice-president, 1545 Baymiller St., Cincinnati, O.; H. M. Pearce, secretary-treasurer, 331 E. 3d St., Covington. (See "Machinery Wanted.")

La., Alexandria—Salt-evaporating Plant.—J. D. Pace is interested in installing salt-evaporating plant in connection with salt-tar and bathhouse; capacity, 2000 pounds of salt. (See "Miscellaneous.")

La., New Orleans—Denatured Alcohol.—Jefferson Manufacturing Co. has been organized with H. O. Penick, vice-president, Whitney Central Bank Bldg., and wires Manufacturers Record as follows: "Capital, \$250,000; mash capacity, 10,000 gallons daily; mill construction; cost \$110,000; blackstrap molasses for raw material; daily output, 8000 gallons proof spirits."

La., New Orleans—Cigars, etc.—Jose Venta Company incorporated with \$10,000 capital stock; Jose V. Venta, president; Sophie Martinez, vice-president; Anna Venta, secretary-treasurer.

La., New Orleans—Rice and Sugar.—Stanton Planting & Manufacturing Co. incorporated with \$75,000 capital stock; Charles A. Farrell, president. (See "Land Developments.")

Md., Baltimore—Coffee Roasting.—Stokes Coffee Co., 13 W. Mt. Royal Ave., will install coffee-roasting plant; has leased five-story warehouse at 309 Exchange Pl.

Md., Baltimore—Overalls, etc.—Stuart Keith & Co., 810 E. Pratt St., leased building at 515 W. Lombard St. and will operate plant formerly operated by Frank-Kline-Stewart Company; machinery and fixtures mainly purchased.

Md., Baltimore—Corks and Seals.—Crown Cork & Seal Co., 1511 Guilford Ave., awarded contract to Monmuenier & Sorrell, 1711 McCulloh St., Baltimore, for alterations to chemical laboratory and machine shop; plans by C. M. Anderson, 324 N. Charles St., Baltimore.

Md., Baltimore—Glass Bottles.—Buck Glass Co., George G. Buck, president, Fort Ave. and Lawrence St., purchased site 55x155 feet at Boyles and Clemm Sts. and is having plans prepared for addition to plant.

Md., Baltimore—Labels.—American Label Manufacturing Co., Cross and Covington Sts., awarded contract to McLaughlin Bros., 915 Bolton St., Baltimore, to erect addition; brick; 36x66 feet; one story; slag roof; cost \$3000.

Md., Baltimore—Solarite, Disinfectant, etc. Solar Chemical Co., Rollo W. Brown, president, 727 12th St. N. W., Washington, D. C., has leased building on W. Saratoga St. and will locate previously noted plant.

Md., Baltimore—Blank Books and Printing. E. C. Ramsey Company incorporated with \$10,000 capital stock by E. Carroll Ramsey (15 E. Ostend St.), I. Harvey Nichols and Isaac T. Parks, Jr.

Miss., Pascagoula—Paper and Pulp.—International Paper Co. (of London, England)

will build 30x136-foot machine shops and eight-room office structure; has awarded contract; plans to build pulp and paper mill. (Same as plant recently mentioned under Moss Point.)

Mo., St. Louis—Cloaks and Suits.—Godlove Cloak & Suit Co. incorporated with \$10,000 capital stock by Jacob Godlove, Mary Godlove and Charles Caplan.

Mo., St. Louis—Wax.—Francis & Ogden Wax Co. incorporated with \$30,000 capital stock by Thomas Francis, Falton T. Francis, Chester W. Greve, Joseph Dickson, Jr., and K. P. McDonald.

Mo., St. Louis—Paper Boxes and Labels.—Mercantile Box & Label Co. incorporated with \$10,000 capital stock by James H. Ewing, Ross D. Ewing, E. C. B. Palmer and others.

N. C., Asheville—Creamery.—Farmers' Co-operative Creamery Co. is being organized to establish \$5000 butter and cheese factory.

N. C., Canton—Fiber.—Champion Fiber Co., Peter G. Thomson, president, Hamilton, O., advises Manufacturers Record his company purchased 49 acres land on Pigeon River, opposite present fiber mill, for future use if required; has no plan now to utilize the land; contemplates adding some machines for manufacturing finished paper.

N. C., Charlotte—Ice-cream Freezers.—North Pole Ice-Cream Freezer Co. incorporated with \$50,000 capital stock by F. H. Andrews of Charlotte, C. P. Hudson of Lancaster, S. C., and others.

N. C., Newbern—Flue Cleaners.—Newbern Flue Cleaner Co. incorporated with \$50,000 capital stock by Thomas B. Hanner, Philadelphia, Pa., and others.

N. C., Walnut Cove—Tobacco.—A. L. Nunn is interested in establishment of tobacco factory.

Okla., Enid—Cigars.—Bruhn-Neville Cigar Manufacturing Co. incorporated with \$5000 capital stock by H. F. Bruhn, W. C. Neville and W. W. Trim.

Okla., Oklahoma City—Disinfectants.—Okla-Saw Disinfecting Co. incorporated with \$25,000 capital stock by B. F. Hughes and W. C. Hughes, both of Oklahoma City, and J. G. Scott, Chicago, Ill.

Okla., Pawhuska—Glass, etc.—J. M. Parks, Wichita, Kan., will, it is reported, establish glass, sash and door factory.

S. C., Florence—Gas.—City contemplates erection of gas plant. Chamber of Commerce, Tom Morgan, secretary, can be addressed for information.

Tenn., Chattanooga—Mattresses.—Parham Mattress Co., 247 Elizabeth Ave., is reorganization of J. H. Parham & Co.; J. H. Parham, president and treasurer; J. B. Parham, vice-president; A. D. Otis, secretary; daily capacity, 100 mattresses; no further equipment needed at present. (Recently noted incorporated with \$10,000 capital stock.)

Tenn., Humboldt—Bottling.—Coca Cola Bottling Co., Jackson, Tenn., will build bottling plant.

Tenn., Lonsdale, R. Station Knoxville—Paint and Shingles.—Tennessee Creosote & Shingle Roof Co. will establish paint and shingle factory.

Tenn., Memphis—Medicinal Specialties, etc. W. M. Kennedy, 8 Weakley Ave., Memphis, Tenn., will install machinery to manufacture medicinal preparations and specialties. (See "Machinery Wanted.")

Tenn., Nashville—Milk Products.—New Southern Milk Products Condensing Co. incorporated with \$25,000 capital stock by W. E. Drake, W. T. Drullard and Andrew Hildebrandt.

Tenn., Paris—Toilet Articles.—National Toilet Co., A. B. Lamb, president, purchased Crete opera building; will remodel and equip for manufacturing toilet articles, etc.

Tex., Amarillo—Creamery.—R. S. Allen, Electra, Tex., purchased 33,000 acres of land in Potter and other counties; will establish butter and cheese plant.

Tex., Dallas—Clothing.—Lorch Manufacturing Co. changed name to Lorch-Grumbach Manufacturing Co. and increased capital stock from \$25,000 to \$50,000.

Tex., Dallas—Leather.—Potts Leather Co. incorporated with \$10,000 capital stock by W. H. Potts, E. W. Ross and T. A. Manning.

Tex., Cuero—Mattresses.—M. A. Grant, Houston, Tex., is promoting establishment of mattress factory.

Tex., Fort Worth—Advertising Novelties.—Fort Worth Novelty Advertising Co. incorporated with \$5000 capital stock by Ireland Hampton, Ed. Hoffman and Dan E. Lydick.

Tex., Henrietta—Gas.—Citizens' Gas Co. incorporated with \$50,000 capital stock by A. B. Edwards, W. Wortham, J. T. Dale and J. E. Dale.

Tex., Houston—Medicine.—Southwestern Medicine Co. incorporated with \$10,000 capital stock by F. M. Johnson, C. W. Scott, R. E. Morse and A. C. Fulton.

Tex., Orange—Paper.—Yellow Pine Paper Mill Co. will improve plant.

Tex., Taylor—Gas.—Taylor Light & Heat Co. is arranging for construction of proposed gas plant; purchased interests of R. E. Shurtz & Son, to whom city previously granted franchise; A. G. Johnson, Lima, O., will install gas-producing machinery.

Va., Norfolk—Clothing.—Norman's (recently noted) incorporated with \$75,000 capital stock will manufacture clothing; has three-story building; J. E. Norman is president.

Va., Richmond—Bottles.—Krouse Bottle Co. incorporated with \$10,000 capital stock to manufacture bottles and glassware; John W. Krouse, president; R. W. Krouse, secretary-treasurer.

Va., Roanoke—Bottling Works.—Lemon-Kola Sales Agency Co., H. C. Elliott, president, increased capital stock from \$25,000 to \$100,000 and will manufacture lemon-kola.

W. Va., Wheeling—Automobile Tires.—Hercules Tire & Rubber Co., Pittsburgh, Pa., contemplates establishing automobile-tire factory.

W. Va., Hundred—Churns.—Cochran Manufacturing Co. incorporated with \$25,000 capital stock; will install plant in summer to manufacture churns; at present will have made by contract; machinery will include engine, press, blowers, rumble, etc.; may erect building; A. F. Gilmer, president; F. M. Arnett, secretary and manager. (See "Machinery Wanted.")

W. Va., Parkersburg—Paints, etc.—Chadock Printing & Decorating Co. incorporated with \$10,000 capital stock by Harry L. Chadock, Clarence W. Howell, Joseph A. Galvin and others to manufacture paints, oils, varnishes, etc.

MOTORS AND GARAGES

Ark., Argenta.—E. A. Ramsey, 116 Maple St., awarded contract to W. H. Lamberson to erect garage; 50x100 feet; one story; brick; cost \$4500. (Recently noted.)

D. C., Washington.—Bowles Motor Sales Co., 1008 14th St. N. W., incorporated with \$25,000 capital stock; Dr. G. W. Bready, president; J. C. Barber, vice-president; Chas. Kloppmeyer, secretary; N. S. Bowles, treasurer and manager; is remodeling building for salesroom and supply house. (See "Machinery Wanted.")

Ga., Savannah.—S. N. Harris will erect garage, machine shop and salesroom.

Ga., Walton.—Frank Manly will erect building at King and Pents Sts.; three stories; brick; lower floor for garage and automobile display room, second floor for offices and third floor for lodgerooms.

Okla., Tulsa.—Standard Motor Car Co. incorporated with \$5000 capital stock by W. L. Walker, William S. Baker and Clarence B. Sexton.

S. C., Spartanburg.—R. H. Nesbitt Auto Co. (recently noted) incorporated with \$10,000 capital stock at Columbia, S. C.) has building and will establish automobile-repair department; R. H. Nesbitt, president and manager; W. D. Nesbitt, vice-president; J. D. Garlington, secretary-treasurer. (See "Machinery Wanted.")

Tenn., Nashville.—Mrs. H. A. Dodd and Mrs. G. P. Edwards have plans by Russell E. Hart, Nashville, for garage for tenants of proposed apartment-house. (See "Apartment-houses.")

Tex., Dallas.—Henderson-Cole Motor Co. incorporated with \$10,000 capital stock by W. F. Bridwell, F. T. Bridwell and C. F. Hurst.

Va., Lynchburg.—Taylor Motor Co. incorporated with \$25,000 capital stock; T. A. Jennings, president; R. C. Taylor, vice-president; H. P. Taylor, secretary.

Va., Richmond—Oakland Auto Co. incorporated with \$15,000 capital stock; R. H. Bruce, president, Chester, Va.; S. V. Gregory, vice-president; G. T. Sharp, secretary, both of Richmond.

RAILWAY SHOPS, TERMINALS, ROUNDHOUSES, ETC.

Ga., Brunswick—Atlanta, Birmingham & Atlantic Railroad, Alexander Bonnyman, general manager, Atlanta, Ga., will, it is reported, improve terminals at cost of \$100,000, including wharves and additional warehouse space.

Ga., Savannah.—Seaboard Air Line Railway, W. L. Seddon, chief engineer, Portsmouth, Va., awarded contract to Fairbanks, Morse & Co., Chicago, Ill. (represented at Savannah by R. S. King), to construct shops, replacing plant recently burned;

building permit states cost will be \$75,000; 160x130-foot main building (machine, blacksmith, boiler and erecting shops) of structural steel, with cement roof and sides; 75 per cent. of outside for windows of ribbed glass; 85-foot turntable and 38 sets of tracks, against 60-foot table and 20 tracks; 10-stall roundhouse with 20 engine pits, 10 protected by fireproof building and 10 in open; 40x60-foot power-house, of steel frame and galvanized iron, to be equipped with boilers, engines and generators, for which contract has not been awarded; all reinforced concrete and steel construction. (Lately mentioned.)

Ga., Savannah.—Central of Georgia Railway, C. K. Lawrence, chief engineer, Savannah, Ga., will increase terminal facilities.

N. C., Norlina.—C. H. Hix, general manager Seaboard Air Line Railway, Portsmouth, Va., states company will not at present erect shops. (Recently noted.)

Okla., Idabel.—St. Louis & San Francisco Railroad Co., M. C. Byers, chief engineer of operation, Springfield, Mo., has invited bids to erect brick depot; cost \$10,000.

Okla., Tahlequah.—St. Louis & San Francisco Railroad Co., M. C. Byers, chief engineer of operation, Springfield, Mo., has invited bids to erect depot; cost \$10,000. (Previously noted.)

S. C., Charleston.—Special correspondent advises Manufacturers Record that Mark W. Potter, 24 Broad St., New York, president of Carolina, Clinchfield & Ohio Railway, announced company will begin construction in 60 days of extensive piers and coal terminals costing \$600,000. (Previously mentioned as proposed.)

ROAD AND STREET WORK

Ala., Anniston.—Calhoun County Commissioners awarded contract to D. B. Lacy & Sons to construct road from Anniston to Alexandria and to Edward Moss to build road from Coldwater to McFall; W. S. Keller, State Highway Engineer. (Recently mentioned.)

Ala., Brewton.—State highway road contract (recently noted) was awarded to J. W. Wright, Jr., R. H. Wright, agents, Evergreen, Ala., home office Union Springs, Ala.; grading, bridging and piping; cost \$8500.

Ala., Talladega.—Talladega county will grade, drain and surface with gravel about 4½ miles of Talladega and Mardisville Rd.; bids received until February 15; W. S. Keller, State Highway Engineer, Montgomery, Ala. (See "Machinery Wanted.")

Ala., Tuscaloosa.—City awarded contract to Tuscaloosa Concrete Co. for sidewalk, curb and gutter construction; 550 square yards cement sidewalks, 1200 linear feet curb and gutter (36-inch gutter) and 880 linear feet curb; S. H. Sprott, Jr., president Board City Commissioners. (Call for bids lately noted.)

Ark., Bentonville.—Benton County Road Commissioners will complete 90-mile turnpike previously begun by W. H. Harvey of Monte Ne, Ark.; proposed to connect road with pike leading to Eureka Springs and Harrison.

Fla., Jacksonville.—Jacksonville Heights Improvement Co., Joseph H. Phillips, president, will construct 30 to 40 miles of sand-clay road.

Fla., Fort Pierce.—St. Lucie County Commissioners will construct 60 miles of hard-surface roads; also bridges and docks; bids received February 7; bond issue \$200,000; D. D. and C. M. Rogers, engineers, Fort Pierce and Daytona, Fla. (See "Machinery Wanted.")

Ga., Atlanta.—City will receive bids until February 5 for furnishing and setting granite and concrete curbing, laying tile, sheet cement and brick sidewalks, constructing various sewers and furnish paving material; R. M. Clayton, chief of construction. (See "Machinery Wanted.")

Ga., Atlanta.—City of Atlanta and Fulton county will expend about \$1,000,000 during 1912 for improvement of streets and roads. Address County Commissioners.

Ga., Columbus.—City will vote on \$50,000 bond issue for road construction. Address The Mayor.

Ga., Rome.—City will construct about 17,000 square yards of pavement and about 6500 linear feet of curb; material, either wood block, vitrified brick, Hassam compressed concrete, asphalt macadam, sheet asphalt or bitulithic; bids received until February 14; R. A. Denny, chairman Board of Public Works; W. M. Wilson, supervising engineer. (See "Machinery Wanted.")

Ga., Waycross.—City will expend \$45,000 to construct sidewalks recently noted; H. D. Reed, Mayor; H. M. Pafford, engineer in charge; bids opened February 1. (See "Machinery Wanted.")

Ky., Jackson.—City will improve streets; \$15,000 bond issue voted. Address The Mayor.

Ky., Louisville.—City will pave portions of 34th St. and Alta, Sherwood, Bonnycastle, Barbee, Rosewood and Bolling Aves.; Board of Public Works will receive bids until 2 P. M. January 30 on asphalt paving with vitrified-block gutters.

Ky., Louisville.—Board of Public Works awarded contract to American Standard Asphalt Co. at about \$48,000 for paving Bardstown Rd. from Bonnycastle to Woodburn Ave.

Ky., Mt. Sterling.—City will pave additional streets with brick. Address The Mayor.

La., Crowley.—City will pave Parkerson Ave. from Southern Pacific Railway tracks to Courthouse Sq.; Police Jury will pave Courthouse Sq.; cost about \$50,000; R. J. Boudreaux, City Clerk.

Md., Baltimore.—H. Kent McCay, chief engineer Paving Commission, will ask bids about January 17 on about 194,000 square yards sheet asphalt, vitrified brick and granite-block paving; plans and specifications with City Engineer, H. Kent McCay, chief engineer of Paving Commission, City Hall. (Previously noted. See "Machinery Wanted.")

Miss., Magnolia.—City awarded contract to J. D. Silver & Sons, Alliance, Ohio, at about \$12,000 for construction of concrete sidewalks and street crossings; about 10,000 square yards; Xavier A. Kramer, Magnolia, Miss., is engineer; Joseph Norwood, Mayor. (Recently mentioned.)

Miss., Vicksburg.—City postponed date of election for voting on \$100,000 bond issue for street improvements from January 23 (as lately stated) to February 14. Address The Mayor. (Recently mentioned.)

Mo., Hannibal.—City will construct brick and asphalt macadam street; cost of brick paving, \$60,000; B. F. Smiley, City Engineer.

N. C., Greensboro.—City is considering \$100,000 bond issue for street paving. Address The Mayor.

S. C., Spartanburg.—City contemplates issuing \$75,000 of bonds for improvement of street and sidewalks and sewerage systems. Address The Mayor.

Tenn., Binghamton.—City awarded contract to Hughey & McTigue, Memphis, Tenn., to construct 24,734 square feet sidewalk, 4377 lineal feet curb, 5010 lineal feet gutters, 1200 cubic yards excavation, 19,700 square yards gravel, six inlets, 200 feet 24-inch soil pipe and 350 feet of 36-inch pipe; total \$13,648; Harry N. Pharn, engineer, 536 Randolph Bldg., Memphis, Tenn. (Call for bids lately noted.)

Tenn., Elizabethton.—Carter county will grade 11 miles of road (four miles having been graded) from Washington county line to Sullivan county line via Elizabethton; road is portion of Memphis-to-Bristol highway; receives bids until February 1; also receive bids for macadam rock work on about 13½ miles of said road; Charles P. Toncray, engineer, Elizabethton; E. E. Hunter, chairman Good Roads Commission. (See "Machinery Wanted.")

Tenn., Jonesboro.—Washington county will construct road from point on intersection of Greene and Washington county lines through Washington county and across Watauga River on bridge, connecting with road in Sullivan county. Address County Commissioners.

Tex., Corpus Christi.—City will vote within 60 days on \$125,000 bond issue for street paving. Address The Mayor.

Tex., Crockett.—Houston County Commissioners and City Council agreed to construct cement sidewalks on public square.

Tex., Dallas.—City awarded contract to Municipal Paving Co., Dallas, at \$6276.74 to pave with asphalt-macadam Bennett Ave. from Ross to Franklin St.

Tex., Fort Worth.—City will improve Henrietta St. from South Boaz St. to Kentucky Ave., containing about 2045 square yards; vitrified brick, bitulithic or Bermudez Lake or Trinidad pitch lake sheet asphalt; bids received until January 16; F. J. Von Zuben, acting City Engineer.

Tex., Galveston.—Municipal Commissioners awarded contract to Standard Engineering & Construction Co., Dallas, Tex., to pave Collett Ave. from East Side to Columbia, and East Side Ave. from Fitzhugh to Garrett St., both with asphalt macadam.

Tex., Houston.—City will pave German St. and Houston Ave. with brick; 1,000,000 paving brick ordered; H. B. Rice, Mayor.

Tex., Mexia.—Precinct No. 5 of Limestone county will vote February 17 on \$20,000 bond issue for road construction. Address Precinct Commissioners.

Tex., Nacogdoches.—City will vote on \$50,000 bond issue to macadamize business streets. Address The Mayor.

Tex., Paris.—Western Paving Co. of Oklahoma City, Okla., is lowest bidder at \$30,760.44 for paving N. Main St., and J. A. Gregory of Dallas, Tex., lowest bidder at \$8487.16 for paving Washington St.; E. H. McCulston, Mayor. (Recently mentioned.)

Tex., Rusk.—Cherokee county defeated \$50,000 road bond issue. Address County Commissioners. (Recently mentioned.)

Tex., San Antonio.—Bexar county will re-top Austin Rd. from Salado Creek to 12-mile post, grade W. W. White Rd. from Austin to Stahl Rd., re-top Corpus Christi Rd. from Harlandale to 10½-mile post and grade and gravel Garraty Rd. from Austin Rd. to New Braunfels Ave.; receives bids until January 20; John V. Huntress, County Auditor. (See "Machinery Wanted.")

Tex., Wortham.—City will construct several hundred feet of vitrified brick sidewalks. Address The Mayor.

Va., Harrisonburg.—Plains District of Rockingham county will vote on \$30,000 bond issue for construction of road from Broadway, through Dovesville, to West Virginia line. Address County Commissioners.

Va., Willoughby Beach.—F. L. Portlock, road engineer, 242 Monticello Arcade, Norfolk, Va., receives bids until January 20 for repairing clay roadbed on Virginia Ave., 3d, 4th and Lake Sts. and for extending clay roadbed on Virginia Ave. to 15th St. (See "Machinery Wanted.")

SEWER CONSTRUCTION

Ala., Bay Minette.—City will construct 1200 feet of 24-inch salt glazed sewer pipe recently noted; bids received February 5; W. D. Stapleton, Mayor. (See "Machinery Wanted.")

Ala., Mobile.—City's plans for constructing sewers include 22,485 feet of concrete, monolithic cement and clay pipe sewers, manholes, etc.; contract price \$19,519; Wright Smith, Mobile, engineer in charge; materials purchased. (Contract recently noted awarded to Sullivan, Long & Hagerty, Bessemer, Ala.)

Ark., Little Rock.—Chicago, Rock Island & Pacific Railway, J. B. Berry, chief engineer, Chicago, Ill., will construct storm sewer according to plans and specifications by Henry Levinson, superintendent of Public Works; W. B. Fox of Chicago, Ill., is contractor.

Fla., Tampa.—City is considering construction of sewer to drain West Hyde Park; Frederick T. Warren, City Engineer.

Ga., Atlanta.—City will receive bids until February 5 for sewer construction; R. M. Clayton, chief of construction. (See "Machinery Wanted.")

Ky., Lexington.—City defeated \$150,000 bond issue for sewer construction; John Skain, Mayor. (Previously mentioned.)

N. C., Black Mountain.—City, L. W. Morgan, Mayor, will expend about \$15,000 on sewer and water-works recently mentioned; engineer not employed. (See "Machinery Wanted.")

S. C., Kingstree.—City awarded contract to B. F. Meeks, Atlanta, Ga., to construct sewer system; four miles of 12, 10 and 8-inch terracotta sewer pipe, flush tanks, manholes, wye branches, etc., and purification plant; L. P. Kinder, Mayor. (Call for bids lately noted.)

S. C., Spartanburg.—City contemplates issuing \$75,000 of bonds for improvement of street and sidewalks and sewerage system. Address The Mayor.

Va., Lawrenceville.—D. S. Hicks, Jr., Mayor, states recently-noted bond issue has been disapproved owing to legal technicality.

TELEPHONE SYSTEMS

Ala., Birmingham.—Board of Revenue granted franchise to C. M. Self, Will Harris, F. W. Moore and others to construct telephone system.

Ga., Cordele.—Southern Bell Telephone & Telegraph Co. (main office, Atlanta, Ga.) contemplates erecting three-story building to cost \$25,000.

Ga., Waycross.—C. C. Buchanan, Jr., petitioned City Council for franchise to construct and operate telephone system; H. D. Reed, Mayor.

Ky., Jackson.—Town Board voted to invite bids on telephone franchise. Address Town Clerk.

Okla., Enid.—Spring Valley Telephone Co. incorporated by Harlan Emerson, R. L. Donnell, Wallace M. Daykin, Martin Hughes and Frank Bogart.

Okla., Lookaba.—Lookaba & Binger Telephone Co. incorporated by J. S. Sensintafer, J. D. Inman, L. W. Vance, B. E. Brown and others.

Tenn., Rutherford.—Rutherford Home Telephone Co. incorporated with \$2000 capital

stock by R. M. Halford, M. Peel, W. R. Canada and J. L. Brown.

Tex., Fort Davis.—Pecos & Rio Grande Telephone Co. purchased local telephone exchange; will construct new lines and erect exchange building.

Tex., Plainview.—Southwest Texas Telephone Co. will make various improvements, including erection of brick building, installation of flashlight system and extension of copper toll line to Floydada; cost about \$35,000.

W. Va., Romney.—Romney Consolidated Telephone Co. incorporated with \$5000 capital stock; construct and operate telephone system 200 miles long; C. P. Miller, president; S. L. Hoover, secretary-treasurer.

TEXTILE MILLS

Ga., Columbus.—Colored Cotton.—Eagle and Phenix Mills will install machinery costing about \$15,000 to double carding capacity and permit production of finer goods; has awarded contract. (Recently mentioned as increasing capital stock by \$250,000.)

Md., Hagerstown.—Woolen Goods.—Royal Woolen Mills Co. chartered with \$10,000 capital stock by W. E. Conner and G. C. Cecil of Parkersburg, W. Va.; John B. Sheets of Wheeling, W. Va., and others.

Md., Hillsdale.—Cotton Goods, etc.—Gambrell Mills Co. incorporated by Melville Gambrell, C. I. T. Gould and Charles A. Kiots.

N. C., Mount Airy.—Woolen Blankets.—C. R. Merritt contemplates establishing woolen-blanket plant; has not purchased machinery. (See "Machinery Wanted.")

Tenn., Knoxville.—Knitting Yarns.—Appalachian Mills contemplates in near future installing spinning plant of 10,000 spindles; now has 50 knitting machines, 150 sewing machines, etc.

Tenn., Springfield.—Woolen Blankets.—Springfield Woolen Mills Co. contemplates adding set of machinery during next two or three months; has 4 sets cards, 40 broad looms, 2 narrow looms, dyeing and finishing equipment, etc.

WATER-POWER DEVELOPMENTS

Ala., Montgomery.—Horne Alabama Railway & Manufacturing Co. incorporated with initial capital stock of \$7500; president, Julius Horne of Milledgeville, Ga.; vice-president, W. H. Taylor of Montgomery; secretary-treasurer, Henry Horne of Macon, Ga.; plans contemplate developing water-power sites on Coosa, Tallapoosa and Tennessee rivers, transmitting electricity to Montgomery, Birmingham and other cities; Coosa River estimated to furnish 300,000 horsepower without storage and 500,000 with storage; Tallapoosa River estimated to furnish 200,000 horsepower; ultimate investment estimated to be \$50,000,000 for developing power sites, building plants, constructing transmission lines, etc.

Ala., Talladega.—Alabama Power Development Co. awarded contract to Phoenix Construction Co., Talladega, to develop Jackson Shoals; develop 3000 horsepower in two vertical hydro-electric units, transmitting electricity to Anniston and Talladega by transmission line now passing within quarter mile of Jackson Shoals; transmission voltage 60,000; contracts awarded for water-wheels and electrical apparatus; estimated cost of work \$200,000; construction begun; Electric Bond & Share Co., R. J. McClelland, engineer, 71 Broadway, New York, is in charge of the work; construction manager at Jackson Shoals Peter R. Haley. (Previously mentioned.)

D. C., Washington.—District appropriation bill includes item of \$30,000 for surveys, plans and specifications for proposed development of Great Falls of Potomac River to generate electricity for transmission to furnish lights in Washington; estimated cost of development for transmission system \$1,500,000. Wm. C. Judson is District engineer. (Previously mentioned.)

Ga., Atlanta.—Central Georgia Power Co., Macon, Ga., has plans for construction of \$85,000 substation in connection with plan whereby it will transmit electricity to Atlanta, from Jackson development, through Central Georgia Transmission Co. recently reported.

Ga., Bibb.—Central Georgia Power Co., Macon, Ga., awarded contract to construct substation to J. W. Gresham Manufacturing Co., Griffin, Ga. This substation is part of company's extensive system for transmitting electricity. (Previously detailed.)

Ky., Cumberland Falls.—Cumberland Electric Light, Heat & Power Co. will, it is reported, be incorporated to develop Cumberland Falls water-power and construct electric plant, transmitting electricity to Louisville, Lexington, Knoxville, Nashville, Frank-

fort, Cincinnati and other cities; reports state dam will be 90 feet high; engineers will soon complete surveys; expenditure of \$5,000,000 contemplated; engineers, H. M. Byllesby & Co., 206 S. La Salle St., Chicago, Ill. (Lately mentioned.)

Mo., Forsyth.—Ozark Water & Power Co., Holman & Laird, consulting engineers, Chemical Bldg., St. Louis, Mo., understood to have completed financing of proposed water-power electrical development on White River; reports state dam and plant will cost \$500,000, and substations with transmission lines \$500,000; company telegraphs Manufacturers Record as follows: "Spillway section 4x510 feet; powerhouse 6x123 feet; core wall 450 feet; Ambursen Hydraulic Construction Co., 88 Pearl St., Boston, Mass., has contract for dam; S. Morgan Smith Company, York, Pa., has contract for water-wheels; General Electric Co., Schenectady, N. Y., has contract for electrical machinery; total equipment, five 875 kilowatt voltage ampere units; total transmission line, 12½ miles." (Previously reported proposed.)

N. C., Whitney.—North Carolina Electric & Power Co., care of Henry L. Cohen, 2 Rector St., New York, writes Manufacturers Record in reference to reports company is preparing to complete water-power-electrical plant previously under construction by Whitney Company; states plans for completion have not been determined.

Tenn., Falls City.—Great Falls Power Co., F. H. Yost, general manager, First National Bank Bldg., Nashville, Tenn., plans to begin constructing water-power-electrical plant to develop Great Falls of Caney Fork River; will construct dam 110 feet high, developing maximum of 42,000 horsepower, for transmission by electricity to Nashville, 68 miles distant, and other cities. (Previously mentioned as proposed.)

Tenn., Rogersville.—W. D. Harmon and McDonald Bros. purchased Rogersville Electric Light Co.'s plant; will install machinery and operate by water-power from Tennessee River at McDonald's mill, 3½ miles from Rogersville; old plant will be retained for emergency; new company to be called Rogersville Electric Co.; W. D. Harmon, president; Vance G. Hale, engineer in charge; construction and machinery bids now open. (See "Machinery Wanted.")

Va., Floyd.—Floyd Electric Power Co. purchased concrete dam across Little River and will install machinery to generate electricity for transmission to furnish light and power; S. G. Proffitt, president. (Recently reported incorporated under "Electric Plants" with \$12,000 capital stock.)

WATER-WORKS

Ala., Birmingham.—Tennessee Coal, Iron & Railroad Co. will construct water-works, including filtration plant at No. 12 mine.

Ala., Greenwood.—W. G. Franz, consulting engineer, Union Trust Bldg., Cincinnati, Ohio, receives bids until February 14 for constructing water-works. (See Ala., Tuskegee.)

Ala., Tuskegee.—Tuskegee Institute will construct water-works; bids received until February 14 at office of Walter G. Franz, consulting engineer, Union Trust Bldg., Cincinnati, Ohio. (See Ala., Greenwood.)

Ark., Berryville.—City will construct water-works; 8-inch mains; cost about \$10,000. Address The Mayor.

Fla., Madison.—City, R. H. Rowe, Mayor, will make but slight improvements to water plant recently noted. (See "Electric Plants.")

Ga., Cordele.—City contemplates voting on \$50,000 bond issue for constructing new water system. Address The Mayor.

Ky., Henderson.—City will construct filtration plant; cost \$60,000 to \$70,000. Address The Mayor.

Ky., Murray.—City will issue \$23,000 of bonds for water-works and electric-light plant. Address The Mayor.

Miss., Vicksburg.—City postponed date of election for voting on \$400,000 bond issue for purchase of water-works from January 23 (as lately stated) to February 14. Address The Mayor.

N. C., Black Mountain.—City, L. W. Morgan, Mayor, will expend about \$15,000 for water-works and sewers recently mentioned. (See "Sewer Construction" and "Machinery Wanted.")

Okla., Hobart.—City voted \$100,000 bond issue for water-works, city hall and parks. Address The Mayor.

Okla., Wakita.—City voted bond issue for water-works. Address The Mayor.

Okla., Dustin.—City will construct water-works; bids received until January 22; W. V.

Brown, City Clerk. (See "Machinery Wanted.")

Okl., Porum.—Township will construct water-works; M. A. Earl & Co., 725 Flynn-Ames Bldg., Muskogee, Okla., are engineers; E. W. Sanders, township clerk.

S. C., Kingstree.—City awarded contract to B. F. Meeks, Atlanta, Ga., to construct water-works; 4 miles cast-iron pipe, 8 tons specials, 46 fire hydrants, valves, valve boxes, brick pumping station, steam rollers, general service pumps, steel tank and tower brick reservoir and deep wells; Le Roy Lee, chairman Board of Public Works. (Call for bids lately noted.)

Tex., Brady.—City awarded contract to J. B. Hawley to construct dams across Brady Creek for water storage and to furnish water filters. (City recently reported to have voted \$40,000 bond issue.)

Tex., Dallas.—City receives bids until January 22 for construction of reinforced concrete dam on Elm Fork of Trinity River, about 20 miles from Dallas; J. B. Winslett, City Secretary. (Recently mentioned. See "Machinery Wanted.")

Tex., Leonard.—City voted \$10,000 bond issue for construction of water-works. Address The Mayor.

Tex., Port Lavaca.—W. E. Shell & Co. (recently noted securing franchise to construct water-works) state capacity will be about 60,000 gallons; plans and specifications not completed; no buildings; J. H. Shell, engineer.

Va., Lawrenceville.—D. S. Hicks, Jr., Mayor, states that owing to legal technicality recent bond issue has been discontinued.

W. Va., Marlinton.—Marlinton Service Co. is organized to take over electric-light and water plant of Marlinton Light & Water Co.; will make some extensions and erect ice plant; probably 10 tons capacity. (Recently noted incorporated with \$30,000 capital stock by J. L. Hechmer, Grafton, W. Va., and others.)

W. Va., Ripley.—City will construct water-works; \$11,000 of bonds issued. Address The Mayor.

WOODWORKING PLANTS

Ala., Anniston.—Wagons.—J. R. Landham purchased Northeast Alabama Buggy & Wagon Co.'s plant; will enlarge and operate.

Ala., Morrisville, R. F. D. from Anniston.—Laths and Shingles.—T. F. Johnson will build lath and shingle mills. (See "Cotton Compresses and Gins.")

Ala., Tuscaloosa.—Veneer.—Southland Veneer Co. will install equipment to utilize waste material from veneer factory.

Ala., Gadsden.—Sash, Doors, etc.—Southern Manufacturing Co., T. B. Gwin, president, writes Manufacturers Record that plans for previously-described plant have been changed; will build mill of brick and concrete fireproof construction; saw-tooth roof; sprinkler system; buildings large enough to admit of future doubling of plant's capacity; equipment contracts mainly placed.

Ark., Des Arc.—Veneer.—Northern capitalists contemplate establishing veneer plant; John T. Cloinger, formerly manager of Buena Vista Veneer Co., can probably give information.

Ark., Hope.—Crates and Baskets.—Hope Crate & Basket Co. will erect plant.

Ark., Lonoke.—Staves and Furniture.—Lonoke Improvement & Manufacturing Co., C. G. Miller, secretary, will consider proposition submitted by manufacturers for establishment of stave and furniture factory.

Ky., Louisville.—Sash, Doors, etc.—Louisville Planing Mill & Hardwood Flooring Co. will expend \$10,000 on factory and planing mill recently noted to be rebuilt; machinery purchased.

Ky., Maysville.—Wood Specialties, etc.—Mason Lumber Co. (recently noted to have purchased Maysville Foundry & Engineering Co.'s plant) will remodel buildings consisting of three brick structures, one, two and three stories, respectively, containing 2800, 800 and 8000 feet of floor space; cost of remodeling, etc., \$20,000; will manufacture wood specialties, conduct general planing mill, etc.

Ky., Paducah.—Furniture.—Finis E. Lack purchased Paducah Furniture Manufacturing Co.'s plant and property for \$12,000.

La., Laplace.—Crates.—O. Montz & Bro. will erect factory; ordinary construction; bids opened; daily capacity, 500 crates. (See "Machinery Wanted.")

N. C., Salisbury.—Furniture.—Grace Furniture Co., People's Bank Bldg., will erect plant to replace burned plant; mill construction; cost \$20,000; install complete furniture-manufacturing equipment. (Previously noted.)

N. C., Unaka.—Staves.—John Gyulal, Hamburg, Ark., representing corporation, is arranging to establish stave mill.

N. C., Winston-Salem.—Boxes.—Mengel Box Co. awarded contract to Harwood & Moss, Newport News, Va., to erect box factory; three stories; reinforced concrete; electric lighting; cost \$10,000. (Recently noted.)

Okl., Pawhuska.—Sashes, Doors and Glass. J. M. Parks, Wichita, Kans., will, it is reported, establish sash, door and glass factory.

Tex., San Antonio.—Coffins and Caskets.—Alamo Casket Coffin Co. organized by J. S. Bourdon and others; for present will manufacture coffins and caskets at plant of Alamo Planing Mill, but later will erect plant.

Va., Norfolk.—Boxes.—American Box & Lumber Co., incorporated with \$25,000 capital stock; William Beaser, president; Clinton H. Benser, secretary, both of Cleveland, O.

Va., Roanoke.—Furniture.—Roanoke Furniture Co. increased capital stock \$30,000; H. B. Hahs, president.

W. Va., Parkersburg.—Handles.—American Handle Works, East St. (recently noted to enlarge factory), is adding sheds for billet storage and installing additional lathes and saws; manufactures hickory tool handles.

BURNED

Ala., Albertville.—Seventh District Agricultural School; loss \$15,000. Address Seventh District Agricultural School Trustees.

Ala., Birmingham.—M. J. Dillard's residence at 2030 Highland Ave.; total loss about \$17,000.

Ala., Birmingham.—Cable Piano Co.'s building; Southern Bell Telephone Co.'s building; total loss \$250,000 to \$300,000.

Ala., Carbon Hill.—Galoway Coal Co.'s mining plant; estimated loss \$50,000; main office, Memphis, Tenn.

Ala., Florence.—Ike Golsky's store and adjoining building; both structures owned by Mrs. Amelia Litten; total loss \$30,000.

Ala., Gadsden.—D. F. Hannigan's residence on Lookout Mountain, owned by B. M. Martin of Alabama City, Ala., and Alford Estate, Gadsden.

Ala., Headland.—J. W. Knowles' cotton gin; estimated loss \$10,000.

Ala., Montgomery.—Fred M. Dorn's residence at Capitol Heights; loss \$3000.

Ala., New Decatur.—American Oak Tanning Co.'s oak-extract plant.

Ala., Selma.—Smitherman & Bros.' store; Cleveland Bros.' store; C. L. Palmer's store.

Ark., Grubbs.—Haggard & Ragsdale's building; J. M. Vance's building; C. D. Camp's building; H. J. Hale's building; J. T. Malone's building.

Ark., Hardy.—Pleasant Hill School, near Hardy; E. F. Eckert in charge.

Ark., Little Rock.—Charles M. Simon's residence at 3d and State Sts.; loss about \$3000.

Ark., Success.—Kimbrough & Co.'s store; Jeff, Hawks & Smith's warehouse; number of dwellings.

Ark., Paragould.—Hickson Bros.' drykilm at pin mill; loss about \$30,000.

Ark., Sulphur Springs.—Oaklawn Inn, owned by Mrs. Beam; loss \$18,000.

D. C., Washington.—White Iron Works corerom and pattern lofts on Maine Ave. near 4½ St.; loss \$3000.

Fla., Key West.—R. Fernandez Havana Cigar Co.'s plant; loss on building, owned by estate of W. R. Kerr, about \$5000.

Fla., Port Tampa City.—Warehouse of Standard Oil Co., main office, 26 Broadway, New York.

Fla., Jacksonville.—C. B. Gay Syrup Co.'s plant; loss \$40,000 to \$45,000.

Ga., Lavonia.—J. M. Freeman's store; J. C. Blackwell's building; loss \$10,000.

Ga., Columbus.—Shepherd Bros.' machinery building at brick yard.

Ky., Bowling Green.—Joseph W. Givert's residence.

Ky., Louisville.—Church of Our Merciful Saviour; loss \$20,000. Address The Pastor, Church of Our Merciful Saviour.

Ky., Owingsville.—M. L. Jones' store, two miles from Owingsville; loss about \$5000.

Ky., Pembroke.—E. B. Ledford's building, loss \$5000; W. H. Jones' two buildings, loss \$5000; Gill Smith's building, loss \$3000.

Ky., Vine Grove.—C. A. Peterson's residence near Vine Grove; loss about \$3000.

La., Mount Herman.—John Burch's sawmill.

La., New Orleans.—Charles Magruder's two buildings on Magazine St.; loss \$7100.

La., Shreveport.—Building at Texas and

Grand Ave., owned by Sisters of Incarnate Word; loss about \$25,000.

La., Strader.—Owl Bayou Cypress Co.'s hotel and store building; Ben Bruce's residence; loss several thousand dollars.

Md., Baltimore.—Murrill & Keizer Company's building at 200-206 N. Holliday St. damaged; Anderson Spark Plug Co.'s equipment on third floor of building; total estimated loss, \$50,000.

Md., Baltimore.—Torch Packing Co.'s shell-crushing plant at Lawrence and Clement Sts.; loss about \$15,000.

Md., Baltimore.—Hotel Theodore, at 702-704 E. Baltimore St., owned by H. M. Marks; loss about \$4000.

Md., Germantown.—Germantown Milling & Manufacturing Co.'s plant, owned by Bowman Bros.; W. H. Benson Estate's warehouse; total loss about \$30,000.

Md., Middletown.—A. M. Swain & Co.'s flour mill; loss \$8000 to \$8000.

Md., Oakland.—G. Semmes Hamill, Jr.'s residence; loss \$15,000.

Md., Timonium.—L. I. German's residence at Timonium and Elwood Aves.; estimated loss, \$20,000.

Miss., Jackson.—Tucker Printing House; loss \$58,000.

Miss., Hattiesburg.—Harrison Cochran Lumber Co.'s planing mill; estimated loss \$18,000.

Miss., Monticello.—J. W. Tynes' cotton gin and mill.

Miss., Meridian.—C. W. Robinson Lumber Co.'s plant damaged; loss about \$5000.

Miss., Raymond.—W. R. Newman's store; Long Bros.' store; loss \$50,000 to \$60,000.

Miss., Sharon.—School building. Address District School Trustees.

Miss., Tupelo.—M. H. Moore's residence.

Miss., Water Valley.—Yalobusha county courthouse; loss \$40,000. Address County Commissioners.

Mo., Excelsior Springs.—Snapp's Hotel, owned by J. W. and F. E. Snapp; loss about \$125,000.

Mo., Joplin.—John F. Wise's building at 521 Main St.; loss \$35,000.

Mo., Kansas City.—Merrington Heights Church, loss \$3500; C. W. Pettit, pastor.

Mo., Kansas City.—Grubel Bottling Works at 2d St. and State Ave.; loss \$40,000.

Mo., Moberly.—Moberly Paving Brick Co.'s plant; reported loss \$150,000.

Mo., St. Louis.—Weyl Bakery & Cafe Co.'s building at 419 N. 6th St.; loss about \$100,000.

Mo., St. Louis.—St. Louis Bag & Burlap Co.'s plant at Main and Locust Sts.; loss about \$50,000.

N. C., Greensboro.—Building owned by W. F. Clegg and occupied as restaurant, shooting gallery, shoe store, etc.

N. C., Tarboro.—F. S. Royster Guano Co.'s plant; reported loss \$100,000; main offices Norfolk, Va.

S. C., Neeses.—H. J. L. Blume's stores and residence.

Okl., Claremore.—W. A. Hall's buildings.

Okl., Copan.—Frick Reid Co.'s supply building; loss \$13,000.

Okl., Grant.—G. W. Oakes' store; R. S. Cozad's store; Dr. Allen's office; total loss \$10,000.

Okl., Mountain View.—City Hall; loss \$32,000. Address The Mayor.

Okl., Orr.—Scivally & Hodges' store; Love county courthouse. Address County Commissioners.

S. C., Bamberg.—D. R. Matheny's residence in Bamberg county.

S. C., Loris.—Prince Hotel; loss about \$3000.

S. C., Pomaria.—Pomaria Oil & Manufacturing Co.'s cotton-oil mill; loss \$12,000 to \$15,000.

Tenn., Chattanooga.—W. O. Cullen Company's building; loss \$2000.

Tenn., Columbia.—Ara M. Holt's residence; loss several thousand dollars.

Tenn., East Chattanooga.—Cross & Phillips' store, loss \$4000; Mrs. Burgess' residence and two other dwellings.

Tenn., Huntingdon.—Carroll county jail. Address County Commissioners.

Tenn., Lexington.—Bank of Lexington, T. A. Lancaster, president, will erect bank building.

Tenn., Medina.—McCashlin & Co.'s store.

Tenn., Lookout Mountain.—B. M. Martin's residence; loss \$5000.

Tenn., Park Station R. Knoxville.—L. J. Peters' residence at 2118 E. Jackson Ave.

Tenn., Shelbyville.—Mrs. James C. Tum's

residence at Jefferson and Lane Sts.; loss \$35,000.

Tenn., Union City.—Fulton Howard's residence; loss \$5000.

Tex., Bonham.—White, Blakeney & Fuller's store; loss on building about \$8000.

Tex., Callisburg.—F. S. Thrasher's residence.

Tex., Comanche.—Dr. J. F. McCarty's residence; loss \$3000.

Tex., Dallas.—E. J. Rust's store at 4232 Ross Ave.; loss \$6000.

Tex., Dallas.—Central Hotel building at 2407 Main St.; loss \$3000.

Tex., Dallas.—Exposition Park Presbyterian Church at Parry and Third Aves.; loss \$3000.

Tex., Dallas.—Curtis P. Smith's building at 2409 Main St.; loss \$3000.

Tex., Dallas.—D. H. Morrow's residence at 915 S. Ervay St.; loss \$6000.

Tex., Fort Worth.—First Baptist Church damaged; loss \$5000; Rev. J. Frank Norris, pastor.

Tex., Fort Worth.—J. E. Rollins' store at 1410 Houston St.; loss on building, owned by Frank Pendry, \$3000.

Tex., Fort Worth.—A. J. Long's building, loss \$30,000; Royal Theater building at 5th and Throckmorton Sts., loss \$3000; A. W. & Sidney Samuels' building, loss \$6000.

Tex., Houston.—P. C. Dunn, Jr.'s residence; loss \$25,000.

Tex., Huntsville.—Dr. Atmar's residence, owned by J. R. Irvin of Waco, Tex.; loss \$5000.

Tex., McKinney.—Ancient Free and Accepted Masons' temple; Benevolent Protective Order of Elks' building; Western Union Telegraph Co.'s building; Wells-Fargo & Co.'s building; W. A. Heffner's restaurant; loss \$75,000 to \$100,000.

Tex., Pilot Point.—Texas & Pacific Railway's station, loss \$5000; R. L. Holmes, division engineer, Marshall, Tex.

Tex., Rotan.—E. H. Conway's residence; loss \$4500.

Tex., San Antonio.—Frank J. Powers' residence; C. H. Edwards' building; loss \$13,000.

Tex., San Antonio.—Frank J. Powers' residence at 506 Fowler St., owned by Dr. B. Edwards; loss \$5000.

Tex., Weatherford.—Joel W. Hicks' store, owned by J. L. Hill & Co.

Va., Clarksville.—Easley Block, occupied by C. L. Doggett and others; loss on building, \$5000.

Va., Lynchburg.—Miller Park Skating Rink, owned by J. L. Crist; loss \$7500.

Va., Machipongo.—Bell & Melson's store, postoffice and other buildings; loss about \$20,000.

Va., Norfolk.—F. S. Royster Guano Co.'s warehouse; loss \$20,000.

Va., Portsmouth.—Charles Syer's residence at 1005 Naval Ave., Park View; loss about \$10,000.

Va., Portsmouth.—Gas plant, residence, barn, office and two silos on Riverview dairy farm, owned by R. A. Bullock; estimated loss \$30,000.

Va., Richmond.—Consolidated Furniture Works; loss about \$30,000.

Va., Richmond.—Charles D. Larna's residence at 623 Seminary Ave., Ginter Park; loss \$20,000.

Va., Hylas.—School building. Address Hanover County Commissioners, Hanover, Va.

W. Va., Grafton.—Grafton Woodworking Co.'s plant; loss \$22,000; F. C. Prim's blacksmith shop; loss \$2000.

W. Va., Kenova.—High-school building; loss \$25,000. Address The Mayor.

W. Va., Lester.—Virginia Railway's depot; H. Fernstrom, chief engineer, Norfolk, Va.

W. Va., Logan.—Logan county courthouse, loss \$100,000; address County Commissioners; Minor & Co.'s department store; Co-operating Mercantile Co.'s store; Star Theater; W. B. Johnson's store; W. E. Lanham's plumbing establishment; U. B. Buskirk's three buildings, loss about \$15,000; total loss about \$250,000.

W. Va., Matewan.—Matewan Liquor Co.'s establishment; Schaeffer Bros.' store; loss about \$15,000.

W. Va., McMechen.—First Methodist Episcopal Church will erect proposed edifice; B. T. Goodwin, J. J. Lineberger, J. T. Powell and others, committee.

W. Va., Parkersburg.—F. R. Hunter's bakery; Charles Brussard's building; Mrs. Anna Ambrose's residence; Methodist Church damaged.

WRECKED BY EXPLOSION

Mo., Windsor.—Bowen Coal Co.'s mine.

BUILDING NEWS

BUILDINGS PROPOSED

APARTMENT-HOUSES

Ga., Atlanta.—J. H. Russell purchased site 50x168 feet on W. Baker St., and will, it is reported, erect apartment-house; three stories.

Ky., Middlesboro.—H. Weinstein Bros. will expend \$5000 to remodel building as apartment and office building recently noted; hot-water heat; day labor. (See "Bank and Office Buildings.")

Md., Baltimore.—George Kirkley is having plans prepared by John R. Forsythe, 232 St. Paul St., Baltimore, for converting dwelling at Carrollton Ave. and Lanvale St. into apartment-house.

Md., Baltimore.—Fireproof Apartments Co. is having plans prepared by Glidden & Friz, Glenn Bldg., 16 St. Paul St., Baltimore, for apartment-house on Charles St. near University Parkway; probably four stories; cost about \$65,000.

Mo., Kansas City.—Rinker Investment Co. will erect two brick apartment-houses at 1410-12 and 1416-18 E. 35th St.; cost \$10,000 each.

Mo., Kansas City.—Addison V. Thurmond, 400 Grand Ave., will erect apartment building; 40x60 feet; six apartments; steam heating; cost \$12,000; plans and construction by owner; plumbing and heating contracts let; also erect duplicate building containing four apartments; rubble-stone foundation. (Recently noted under "Dwellings." See "Machinery Wanted.")

Mo., Kansas City.—R. L. Rinker Investment Co. will erect two apartment-houses; four apartments each; brick and stone; cost \$10,000.

Mo., St. Louis.—J. Charles Mueller will, it is reported, erect nine five and six-room apartments; cost \$7500 each.

Tenn., Memphis.—Mrs. John B. Clough of Boston, Mass., is reported as having plans prepared by L. M. Weathers, Memphis, for apartment-house at Madison Ave. and Pauline St.; 100 rooms divided into four, five, six and seven-room apartments; brick; stone trimmings; six stories; cost \$80,000.

Tenn., Nashville.—Mrs. H. A. Dodd and Mrs. G. P. Edwards have plans by Russell E. Hart, Nashville, for apartment-house on West End Ave.; four stories with basement; 65x140 feet; colonial style; stone, brick and steel construction; 12 six-room apartments; servants' quarters; steam-heated garage.

Tex., Dallas.—Mrs. Annie Henry will erect 12-room apartment-house on Bryan St.; cost \$5000.

Tex., Dallas.—Brin Bros. will erect apartment-house on Hughes St.; 25 rooms; cost \$10,350.

ASSOCIATION AND FRATERNAL

Ark., Hot Springs.—Negro Knights of Pythias plan erection of \$30,000 temple; H. C. Yerger, Hope, Ark.; Rev. James Jones, Pine Bluff, Ark.; M. C. Gay, Marianna, Ark., and others, temple commission.

Ark., Little Rock.—Al Amin Temple, Ancient Arabic Order of Nobles of the Mystic Shrine, will erect temple at 21st and Main Sts.; Arabian style; pressed brick; lodge room, 80x100 feet; stage and balcony; A. L. Smith, E. G. Thompson, Charles Ables and others, trustees in charge. (Previously noted.)

Fla., Camp Walton.—Ancient Free & Accepted Masons, W. N. Hartgrove, chairman building committee, Garners, Fla., will erect Masonic Temple; plans by W. C. Fredericks, 414 Thelen Bldg., Pensacola, Fla. (See "Machinery Wanted.")

Ga., Athens.—Young Men's Christian Association is having plans prepared by Fred J. Orr, 712 Southern Mutual Bldg., Athens, for association building; two stories; stucco; cost \$15,000.

Ga., Dalton.—Frank Manly will erect garage, office and lodge building. (See "Motors and Garages.")

Ky., Louisville.—Kosair Temple, Order of the Mystic Shrine, plans erection of temple. La., Donaldsonville.—Lodge No. 1153, Benevolent Protective Order of Elks, plans to erect lodge building.

Mo., Springfield.—Young Women's Christian Association will erect building.

Tex., Bartlett.—Ancient Free and Accepted Masons will erect temple; cost about \$10,000.

Va., Bedford City.—Building committee of Elks' National Home will meet January 23

to adopt final plans for home to cost \$300,000; plans prepared by Ottenheimer, Stern & Reichert, 105 W. Monroe St., Chicago, Ill. (Previously noted.)

W. Va., Warwood.—Charles H. Dowler, R. A. Alexander, Dr. W. B. McKee and others are promoting erection of Young Men's Christian Association Building; probably 75x150 feet; three stories; hot-water heat; cost \$25,000; plans not complete.

BANK AND OFFICE

Ala., Birmingham.—First National Bank will, it is reported, expend \$50,000 for improvements to bank building, including doubling size of entrance, placing marquee over same, constructing basement, making improvements to upper stories and to elevator, etc.

Ark., Arkadelphia.—R. W. Hule, president of Citizens' National Bank, is reported to erect bank and hotel building. (See "Stores.")

Fla., Tampa.—Frank Bruen and C. E. Webb will erect office building; two stories; foundation to permit erection of additional stories; 11 offices; Jek's clinker brick; cost \$18,000.

Ga., Dalton.—Frank Manly will erect garage, office and lodge building. (See "Motors and Garages.")

Ga., Dublin.—First National Bank, F. G. Corker, president, contemplates erection of six-story bank and office building.

Ky., Lexington.—James B. Haggin will, it is reported, erect dairy depot and office building.

Ky., Middlesboro.—H. Weinstein Bros. will expend \$5000 to remodel building as offices and apartments; 50x140 feet; hot-water heating; day labor. (Recently noted.)

La., Baton Rouge.—Yazoo & Mississippi Valley Railroad, S. S. Morris, general superintendent, Memphis, Tenn., will erect general office building; cost \$10,000; steel and pressed brick.

La., Washington.—J. Franklin Schell, representing Union Irrigation Canal Co., will erect commercial and office building.

Md., Frederick.—Frederick County National Bank is having plans prepared by A. C. Leach, 323 N. Charles St., Baltimore, Md., for bank building; 36x90 feet; probably brick with stone trimmings; three stories; cost about \$100,000. (Previously noted.)

Md., Baltimore.—Robert Garrett & Son, 506 Continental Bldg., are having plans prepared by Wyatt & Nolting, Keyser Bldg., Baltimore, for office building at South and German Sts. (Recently noted.)

Mo., St. Louis.—George Knapp & Co. will expend \$5000 for improvements to St. Louis Republic Bldg., including rearranging business and editorial offices, composing-room, providing store building, etc.

N. C., Greensboro.—Security Life & Annuity Co. will erect office building; not less than eight stories; steel and concrete; front probably of pressed brick; double elevators; cost about \$150,000.

N. C., Rutherfordton.—Commercial Bank, John C. Mills, president, will erect bank building.

Tex., Brownsville.—B. G. Stegman has plans for office and store building. (See "Stores.")

Tex., Dallas.—Commonwealth National Bank, G. C. McNabb, manager, will combine adjoining building with Commonwealth National Bank Building; replace present floors with concrete; make combined building 53x200 feet for first five stories and upper stories 53x100 feet.

Tex., Goliad.—First National Bank will erect bank building.

Tex., Mercedes.—Planters' State Guaranty Bank, E. P. Gregg, cashier, will erect bank and office building; two stories; cost about \$12,000.

Tex., Fort Worth.—A. J. Long will probably erect office building to replace structure reported burned at loss of \$30,000.

Va., Richmond.—Savings Bank of Richmond, L. Z. Morris, president of trustees, plans to improve bank building.

Tex., Scotland.—C. H. Herman of Sandersville, Ga., is promoting organization of bank and erection of bank building and warehouse.

W. Va., Huntington.—Fred C. Prichard of Robson-Prichard will not erect office building as recently reported.

W. Va., Wheeling.—Real Estate Savings Bank organized by Richard Robertson and others; will, it is reported, erect bank building.

CHURCHES

Ala., Birmingham.—Tennessee Coal, Iron & Railroad Co. will erect churches for negro and white residents. (See "Dwellings.")

Ark., Hot Springs.—First Presbyterian Church has plans by Charles L. Thompson, Little Rock, Ark., for repairs to edifice recently reported burned; steam heat. (See "Machinery Wanted.")

Ark., Little Rock.—Capitol View Methodist Church is having plans prepared by R. P. Morrison, Little Rock, for edifice; cost \$40,000.

Ga., Atlanta.—All Saints' Episcopal Church purchased Cliff Hatcher property and will, it is reported, enlarge edifice. Address The Rector, All Saints' Episcopal Church.

Ga., Atlanta.—Pryor Street Presbyterian Church has plans by Robert Carpenter, Austell Bldg., Atlanta, for edifice; 48x113 feet; brick veneer; furnace; cost \$15,000; day labor. (Recently noted.)

Ga., Savannah.—Grace Methodist Church will expend \$15,000 to \$18,000 for enlargement and improvements to church. Address The Pastor, Grace Methodist Church.

La., New Orleans.—Our Lady Star of the Sea Church, Rev. Father Charles, pastor, plans to erect combined church and school building.

Md., Baltimore.—Moses-Montifore Ameusas-Esrael Congregation has plans by and is receiving bids through Henry J. Tingley, 312 N. Charles St., Baltimore, to erect synagogue at 535-537 S. Smallwood St.; two stories; brick; dark iron-spot brick front; tin roof; gas and electric lights; steam heat; cost \$12,000; two dwellings on site to be torn down.

Mo., Pierce City.—St. Mary's Church proposes to erect brick edifice; 56x130 feet. Address The Pastor, St. Mary's Church.

N. C., Charlotte.—Villa Heights Associate Reformed Presbyterian Church, Rev. E. G. Carson, pastor, accepted plans for proposed edifice; brick.

N. C., Wilmington.—B'nai Israel Society purchased site on Walnut St. between 3d and 4th Sts. and will erect synagogue.

N. C., Winston-Salem.—First Baptist Church will erect edifice in East Winston; W. Carey Brown, chairman of committee.

Va., Portsmouth.—South Street Baptist Church, Rev. L. Judson Westfall, pastor, will erect addition to church for Sunday-school department.

CITY AND COUNTY

Ala., Moulton.—Jail.—Bids received until 2 P. M. February 14 to erect city jail; plans can be seen in office of J. C. Kumpe, Judge of Probate Court, and in office of William S. Hull, architect, Jackson, Miss.

Ark., Pine Bluff.—Hospital.—Jefferson county, C. M. Philpot, judge, is considering erection of hospital and establishment of demonstration farm.

Ark., Fort Smith.—City Hall, etc.—City and Sebastian county will probably arrange plans in 60 or 90 days for city hall and courthouse; fireproof construction; electric lighting; cost \$300,000; architect not selected; John H. Howell, member of committee. (Recently noted.)

La., Lake Charles.—Fire Station.—S. O. Shattuck, City Clerk, will receive bids until 8 P. M. February 6 to erect fire station at Ryan and East Sts.; two stories; brick; certified check for \$250; plans and specifications at office of I. C. Carter, architect, Lake Charles.

La., New Orleans.—Warehouses.—City is having plans prepared by J. F. Coleman, consulting engineer of Dock Board, for proposed public warehouse system with reported capacity of 250,000 bales.

La., Tallulah.—Cattle Pens and Dipping Vats.—J. H. Divine, C. L. Gilmer and T. P. Broadus, committee of Police Jury of Madison county, will open bids addressed to A. L. Slack, secretary, February 5, to erect 10 cattle pens with dipping vats attached in accordance with model on exhibition at office of board.

Okla., Clinton.—City Hall and Fire Station. City Council receives bids until 8 P. M. January 18 to erect two-story-and-basement fireproof city hall and fire station; separate bids for plumbing, heating and electric wiring; certified check for 2 per cent. amount of bid; plans and specifications at office of W. J. Aycock, Mayor, or may be had from Smith & Parr, architects, Oklahoma City, Okla., on deposit of \$15; S. J. Storm, City Clerk.

Okla., Hobart.—City Hall.—City voted \$100,000 bond issue for city hall, water-works and parks. Address The Mayor.

Tenn., Cookeville.—Jail.—City will erect jail; fireproof construction; electric lighting; cost \$4000 to \$5000. Address The Mayor.

Tenn., Huntingdon.—Jail.—Carroll County Commissioners will rebuild jail reported burned.

Tenn., Huntingdon.—Jail.—Carroll County Commissioners will rebuild jail reported burned; cost \$30,000; plans not made; Wilson Enoch, Judge.

Tex., Alice.—Jail and Courthouse.—Jim Wells county, Walter Perkins, judge, will receive bids until January 27 to erect courthouse and jail; plans and specifications at office of Albee B. Ayres, architect, San Antonio, Tex. (Recently noted.)

Tex., Houston.—Jail.—Harris County Commissioners contemplate remodeling jail; plan is to remodel criminal court quarters for hospital ward for insane prisoners and quarters for female prisoners; are also considering erection of annex.

Va., Portsmouth.—Gunroom.—City contemplates erection of gunroom at Grimes Battery; cost not to exceed \$10,000. Address The Mayor.

Va., Richmond.—Market.—Committee on Markets is considering plans submitted by Carnel & Johnson, Richmond, for proposed city market. (Previously noted.)

Va., Richmond.—Library.—City is considering erection of circulating library. Thomas J. Todd is interested.

W. Va., Beckley.—Jail, etc.—Raleigh county adopted plans prepared by B. F. Smith, Room 503, 817 14th St., Washington, D. C., for jail and jailer's residence; cost \$40,000; M. J. Meadows, County Clerk.

COURTHOUSES

Ark., Fort Smith.—City and Sebastian county will probably arrange plans for courthouse and city hall in about 60 or 90 days; cost \$300,000. (See "City and County.")

Fla., Arcadia.—De Soto County Commissioners rejected all bids to erect courthouse and will receive new bids until January 22; cost about \$80,000; plans by Bonfoey & Elliott, Tampa, Fla. (Recently noted.)

Fla., Clearwater.—Pinellas County Commissioners will ask architects to submit plans for courthouse.

Okla., Muskogee.—Courthouse Building Co. incorporated with \$150,000 capital stock by T. H. Martin, Charles W. Reid, J. N. Wilson and others. (Mr. Martin recently noted to erect building and lease portion of same to county.)

Tex., Alice.—Jim Wells county, Walter Perkins, judge, will receive bids until January 27 to erect courthouse and jail. (See "City and County.")

Tex., Gall.—Borden county defeated \$50,000 bond issue to erect courthouse; J. J. Good, County Judge. (Previously noted.)

DWELLINGS

Ark., Argenta.—W. C. and J. P. Faucette has plans by George R. Mann, Little Rock, Ark., for four cottages on 5th St.

Ala., Bay Minette.—John A. Ertzinger will erect dwelling; stucco finish.

Ala., Gadsden.—Laverty Bros. will erect two dwellings.

Ala., Gadsden.—First Methodist Church will expend \$3500 to erect parsonage; 10 rooms; mill construction; grates; gas and electric lighting; George W. Renne may be addressed. (Recently noted.)

D. C., Washington.—James T. Kenyon, 729 15th St. N. W., will erect eight two-story brick dwellings at 904-906 Virginia Ave. S. E., 1000-06 9th St. S. E. and 913-15 K St. S. E.; cost \$16,000.

D. C., Washington.—H. R. Howenstein, 1314 F. St. N. W., will erect seven two-story brick dwellings at 1342-52 G St. S. E.; cost \$15,000; will erect store and dwelling at 1340 G St. S. E. to cost \$2500.

D. C., Washington.—L. H. Woolsey, 3513 Center St. N. W., will erect two-story frame dwelling at 3335 Runnymede Pl. N. W.; cost \$5400.

D. C., Washington.—J. S. Gruver of Thrift Building Co., Union Trust Bldg., will erect seven two-story brick dwellings at 4912 1st St., 4111-4115 and 4110-4112 Fessenden Pl. N. W.; cost \$21,000.

D. C., Washington.—S. J. Prescott & Co., 814 13th St. N. W., will expend \$7000 to erect two dwellings; 16 feet 8 inches by 59 feet 7 inches; tile mansard and tin roofs; hot-water heat; electric lighting; bells and speaking tubes; plans by A. P. Clark, 816

14th St. N. W., Washington; construction by owner. (Recently noted.)

D. C., Washington.—J. B. Henderson has plans by Oakley Totten, 817 17th St. N. W., Washington, for library addition to dwelling; 40x26 feet; fireproof construction; cost \$20,000. (Recently noted.)

Fla., Brooksville.—W. J. Leslie will erect dwelling.

Fla., Buena Vista.—Walter E. Flanders of Miami, Fla., is having plans prepared by Mr. Pfeiffer for residence on site purchased through J. K. Dorn of Miami; will also erect bathhouse and docks.

Fla., Green Cove Spring.—W. Y. Hoyt will erect residence; 40x36 feet; ordinary construction; furnace; electric lighting; cost \$18,000; plans by Melvin C. Greeley, Jacksonville, Fla.; address architect.

Fla., Tampa.—Oscar Kellers will erect three bungalows.

Fla., Tampa.—Lopez & Cantos will erect residence at Thirteenth Ave. and 20th St.; cost \$3000.

Ga., Atlanta.—J. B. Chamblee, 46 Euclid Ave., will erect three dwellings; 10 rooms each; cost \$4500 each. (Recently noted.)

Ga., Atlanta.—J. N. McClure, Duluth, Ga., will erect residence; cost \$25,000.

Ga., Atlanta.—J. W. Ferguson will erect residence.

Ga., Athens.—J. W. Hart has plans by Fred J. Orr, 712 Southern Mutual Bldg., Athens, for two-story frame and stucco dwelling; day labor.

Ga., Atlanta.—E. W. Grove Realty Co. will erect bungalows and stone cottages; plans will not be ready before late spring; work will be done by company from their own quarries; no contract work. (Recently noted incorporated by E. W. Grove, St. Louis, Mo., and others.)

Ga., Columbus.—Dr. G. Stewart Murray is having plans prepared by Fred J. Orr, 712 Southern Mutual Bldg., Athens, Ga., for dwelling; one story; stucco and fireproof construction; heating not determined.

Ga., Greensboro.—J. G. Faust has plans by Fred J. Orr, 712 Southern Mutual Bldg., Athens, Ga., for dwelling; 10 rooms; two stories; brick; cost \$10,000; will let contract soon.

Ga., Marietta.—First Baptist Church will erect parsonage; cost \$3000. Address The Pastor, First Baptist Church.

Ga., Savannah.—City Investment Co. will erect 15 cottages in Rivers Ward on 6th St.

La., Lake Charles.—C. O. Noble will let contract about January 22 to erect dwelling; 12 rooms; ordinary construction; tile roof; electric lighting; cost \$10,000; plans by E. C. Phillips, Lake Charles.

Md., Baltimore.—Charles Libowitz, 758 Columbia Ave., will erect store and dwelling. (See "Stores.")

Md., Baltimore.—George K. Bashore, 2903 W. North Ave., will erect residence on Elsinore Ave. near Bateman St.

Md., Baltimore.—Frank Novak, 2808 E. Jefferson St. is arranging to erect several hundred dwellings in East Baltimore.

Md., Baltimore.—Wilson H. Carter, 2825 Windsor Ave., has plans by Stanislaus Russell, 15 E. Fayette St., Baltimore, for eight dwellings on Poplar Grove St. between Harlem and Edmondson Aves.; brick; two stories; 13x45 feet; slag roof; cost \$3600; and seven two-story brick dwellings on Harlem Ave. between Seventh and Longwood Aves.; 14x12 feet; slag roof; hot-air heat; cost \$7000; construction by owner.

Md., Baltimore.—Charles Hughes has plans by John R. Forsyth, 232 St. Paul St., Baltimore, for cottage at Mont Alto; two and a half stories; frame; slate roof; tiled bathroom; electric lights; cost \$4000; owner will supervise construction.

Md., Baltimore.—James S. Donahue, 411 E. 23d St., has plans by John H. Powers for 21 dwellings at Cokesbury and 23d Sts.; two stories; brick; 14x18 feet; Carey roofing; hot-air heat; cost \$52,500; construction by owner.

Md., Baltimore.—Kathland Realty Corporation has plans by and is receiving bids through Henry J. Tinley, 312 N. Charles St., Baltimore, to erect dwelling at northwest corner Kathland and Wakefield Aves.; two and a half stories; frame; electric lights; cost \$6500.

Md., Baltimore.—J. Leland Hanna, 822 Equitable Bldg., will not erect dwellings, as recently reported.

Md., Baltimore.—E. J. Gallagher Realty Co., 2612 Fleet St., will erect 19 dwellings on 26th St. between Remington and Huntingdon Aves., 50 on Belona Ave. between Foster and Fleet St. and 11 on Huntingdon Ave. between 26th and 27th Sts.

between 26th St. and Weyman Ave.; two stories; brick; 12x40 feet; "Carey" roofing; cost \$90,100; construction and plans by owner.

Md., Cambridge.—Albanus Phillips will close bids January 24 to erect dwelling; 55x62 feet; three bathrooms; press brick; slate or tile roof; slag deck; copper cornices; tile floors; electric fixtures and heating reserved; Leon Wilde Crawford, architect, 919 Market St., Wilmington, Del., taking estimates. (Recently noted.)

Md., Catonsville.—John C. Rose, Room 48 Postoffice Bldg., will not erect dwelling as recently reported.

Md., Catonsville.—John A. Sinclair, 1110 W. Baltimore St., Baltimore, Md., purchased four acres of ground on Edmondson Ave. between Catonsville and Ellicott City, and will erect cottage.

Md., Oakland.—William R. Offutt will erect dwelling.

Mo., Kansas City.—E. C. Haller will erect dwelling at 5925 Brookside; cost \$3500.

Mo., St. Louis.—Stellar Realty Co. will erect bungalow on Clayton Rd.

N. C., Concord.—G. H. Richmond is having plans prepared for residence.

N. C., Lumberton.—W. A. McPhaul's residence will contain 12 rooms; ordinary and mill construction; Peck-Williams system of heating; cost \$12,000; plans prepared by Frank B. Simpson, Raleigh, N. C.; owner may be addressed. (Recently noted.)

N. C., Wilson.—J. C. Hadley will erect two dwellings; two stories; total cost \$4000.

S. C., Charleston.—Calhoun Securities Co., R. B. Gilchrist, secretary-treasurer, will erect about 18 dwellings on Colonial St.

S. C., Greenville.—B. E. Geer has plans by F. G. Rogers, Greenville, for two-story dwellings; total cost, \$3000.

S. C., Greenville.—J. E. Carter will erect residence on Garlington St.; cost \$3500.

Tenn., Ovoca (not a postoffice).—Ovoca Building Society organized by L. N. McQuiddy, E. E. Elam, both of Nashville, Tenn., and others; plans to erect additional cottages at Knights of Pythias Home to accommodate visitors; Knights of Pythias will also make improvements to home and provide additional facilities.

Tenn., Memphis.—A. J. Boots, 15 Lee Bldg., will expend \$3000 each to erect six bungalows; pebble veneer; metal or slate roofs; hot-water heat; electric lighting; plans and construction by owner. (See "Machinery Wanted.")

Tex., Amarillo.—T. W. Stanford will rebuild dwelling and store 24x36 feet and 6x32 feet; frame; electric lighting; cost \$3200; day labor, supervised by owner. (Recently noted burned.)

Tex., Corpus Christi.—R. J. Kleberg will erect ranch home to replace recently-burned structure.

Tex., Dallas.—R. P. Cooper will erect three dwellings at 4819-21-25 East Side Ave.; cost \$10,000.

Tex., El Paso.—Mayfield Realty Co. will erect three 5-room, two 6-room and three two-story 7-room dwellings; mill construction; hot-air heat in all but one; electric lighting; shingle roof; cost \$2400, \$2900 and \$5400 to \$5500 each, respectively; plans and construction by owner. (Recently noted.)

Tex., Houston.—Russell Brown Company will erect six dwellings.

Tex., Houston.—H. M. Garwood will erect residence.

Tex., Houston.—J. W. Selber has plans by H. C. Banker & Co., Houston, for residence in Montrose Addition; two stories; 10 rooms; Spanish tile roof; hot-water heating plant in basement; porte cochere; cost \$10,000.

Tex., Sherman.—D. B. Lyon will not erect residence as recently reported.

Tex., Yoakum.—John Fink of San Antonio, Tex., will erect three cottages.

Va., Portsmouth.—Charles Syer, 1035 Naval Ave., will rebuild residence reported burned at loss of about \$10,000.

GOVERNMENT AND STATE

Ga., Atlanta.—Reformatory.—R. E. Davison, chairman of Prison Commission, will receive bids until noon January 25 to erect addition to reformatory building at State Farm; plans and specifications at office of commission or may be had on deposit of \$25; certified check for \$1000, payable to Mr. Davison.

La., Hammond.—Postoffice.—Treasury Department, James Knox Taylor, supervising architect, Washington, D. C., will, it is reported, begin construction of proposed \$50,000 postoffice building about April 1.

Mo., Jefferson City.—Capitol.—L. Baylor Pendleton, advisory architect, Central National

Bank Bldg., St. Louis, Mo., is preparing program for competitive plans to select architect for new State Capitol; cost \$3,000,000. (Previously noted.)

Mo., Marysville.—Postoffice.—Treasury Department, James Knox Taylor, supervising architect, Washington, D. C., opened bids to erect postoffice; W. D. Lovell, Minneapolis, Minn., is lowest bidder for limestone construction at \$61,400; General Construction Co., Milwaukee, Wis., is lowest bidder for sandstone construction at \$65,590. (Recently noted.)

Tex., Austin.—Home.—State will enlarge Confederate Women's Home; Oscar B. Colquitt, Governor.

Tex., Corpus Christi.—Postoffice.—Treasury Department, Office of Supervising Architect, Washington, D. C. Proposals received in this office until 3 P. M. March 2 for construction complete (including plumbing, gaspiping, heating apparatus, electric conduits and wiring, and interior lighting fixtures) of United States postoffice and custom-house at Corpus Christi, Tex.; building to be 400 square feet ground area; two stories and basement; stucco finish; tile roof; drawings and specifications may be obtained from custodian of site at Corpus Christi or at this office, at discretion of Supervising Architect, James Knox Taylor.

HOTELS

Ala., Mobile.—Martin Lindsey will convert structure at 10-12-14 S. Conception St. into 30-room hotel.

Ark., Arkadelphia.—R. W. Hule, president of Citizens' National Bank, is reported to erect hotel and bank building. (See "Stores.")

Ark., Sulphur Springs.—Mrs. Beam will rebuild Oaklawn Inn, reported burned at loss of \$18,000.

Ga., Savannah.—Collins Bros. Company will convert building at Congress and Abercorn Sts. into stag hotel; five stories; 30x80 feet; brick; steam heat; electric lighting; ornamental posts with three and five lights; plate-glass front to extend around entire building with copper and marble; plans and construction by owner. (See "Machinery Wanted.")

Ky., Louisville.—Bosler Hotel Co., Nicholas Bosler, president, will not make definite plans for addition and annex to Tyler Hotel until spring. (Recently noted as Tyler Hotel Co.)

Ky., Louisville.—Seelbach Hotel Co. will erect addition; 10 stories; cost \$150,000; construction will begin early in spring. (Recently noted at Paducah, Ky.)

Miss., Laurel.—W. W. Beatty, proprietor of Southern Hotel, is having plans prepared for annex to hotel; three stories; 30 rooms.

Mo., Carthage.—E. B. Jacobs and J. P. Leggett are interested in erection of proposed hotel and theater building; four stories; seating capacity of theater about 1500; cost about \$165,000.

Mo., Excelsior Springs.—J. W. and F. E. Snapp will rebuild Snapp's Hotel reported burned at estimated loss of \$125,000.

Tex., Brownwood.—J. W. Spangenberg will rebuild Plaza Hotel; fireproof construction; 60 rooms. (Recently noted burned.)

Tex., Houston.—Almon Cotton rejected all bids to erect hotel; will have plans revised by Jones & Tabor, 507 Binz Bldg., Houston, to bring cost of building to less than \$200,000; original plans call for 10-story structure; 50x100 feet; fireproof; 105 rooms. (Recently noted.)

Va., Rocky Mount.—B. S. Robertson will expend \$8000 to \$10,000 to rebuild Rocky Mount hotel recently noted; 30 rooms and 12 baths; mill construction; brick; steam heat; electric lighting; concrete sidewalks; construction by owner. (See "Machinery Wanted.")

MISCELLANEOUS

Ark., Little Rock.—Hospital and Stable.—Rice & Rice are having plans prepared by Clyde A. Ferrell, Little Rock, for hospital and stable at 7th St. and Broadway; pressed brick; 50x140 feet; cost \$7500.

Fla., Jacksonville.—Clubhouse.—Jacksonville Motor Club is considering and will probably accept plans presented by H. J. Klutho, Jacksonville, for clubhouse; 250 feet frontage; cost \$12,000, including bulkheading and grading; Stockton Broome, chairman of building committee.

Fla., Miami.—Bowling Alley.—W. C. Groves will erect bowling alley building on Avenue D; one story; concrete.

Ga., Macon.—Home.—Morris Brown College of Atlanta, Ga., will erect home for old and disabled negroes, etc. (See "Schools.")

Ky., Bowling Green.—Stock Barn.—E. L.

Hendrick will rebuild stock barn; plans will not be made before spring. (Recently noted burned.)

Ky., Louisville.—Home.—German Protestant Altemhelm Society, 936 Barret Ave., plans to erect annex to home to cost about \$20,000.

La., Alexandria.—Bathhouse, etc.—J. D. Pace is interested in erection of bathhouse, sanitarium, etc.

La., Shreveport.—Fair Building.—Louisiana State Fair Association, Dr. C. C. McCloud, president, has plans by J. Y. Snyder, First National Bank Bldg., Shreveport, for fair buildings, including grandstand and coliseum costing \$35,000 each; administration and woman's buildings, costing \$3000 and \$10,000, respectively; also natatorium 200x400 feet, cost \$10,000; drill salt well, construct pagodas, walks, etc.; all buildings to be fireproof, steel and concrete; total cost about \$100,000; contract to be let in next 60 days. (Recently noted.)

Mo., Clayton.—Clubhouse.—St. Louis Country Club, St. Louis, Mo., will purchase 227 acres of land and erect \$300,000 clubhouse in center of tract, reserving about 150 acres for club grounds, upon which \$40,000 will be expended for golf links and tennis courts and \$12,000 for polo grounds; remainder of tract to be subdivided into tracts of from 2 to 10 acres and sold for residence sites to members.

Mo., Fenton.—Clubhouse.—William R. Tonkins, Kirkwood, Mo., will erect clubhouse for Fenton Farmers' Club; 100x80 feet; cost \$8000.

N. C., Durham.—Home.—North Carolina Children's Home Society, Greensboro, N. C., is receiving bids to erect permanent home near Durham; W. B. Streeter, superintendent.

Okl., Chickasha.—Hospital.—John Willmot and Dan Willmot will enlarge veterinary hospital on 6th St.

Okl., Oklahoma City.—Hospital.—Bailey & Bailey, Oklahoma City, are preparing plans for proposed Packington general hospital; 60 rooms; cost about \$20,000; William Ribble is interested.

S. C., Camden.—Hospital.—President L. T. Mills of Chamber of Commerce appointed following committee to raise funds for use in connection with Capt. John Burdell's bequest to erect hospital: W. M. Shannon, chairman; L. A. Wittousky, W. R. Hough and others.

S. C., Charleston.—Auditorium.—D. C. Barbot, architect, 26 Broad St., Charleston, will receive bids until noon January 30, to erect auditorium at Faber Place, on Ashley River; spur track of Atlantic Coast Line Railroad, soon to be completed, to be used by contractor for hauling material to site; plans, specifications and information on application.

S. C., Columbia.—Hospital.—Dr. A. B. Knowlton will receive bids until January 30 for addition to hospital; 50x84 feet; three stories and basement; ordinary construction; gas and electric lighting; cost \$30,000; certified check for \$500 payable to owner; plans and specifications at office of J. H. Sams, architect, Columbia, or may be had on deposit of \$25; heating and electric contracts to be let separately. (Recently noted.)

Tenn., Chattanooga.—Orphanage.—Volunteers of America plan to erect orphanage on organization's farm near East Chattanooga.

Tex., Houston.—Stock Exchange.—Union Stock Yards Co. will expend \$80,000 to erect Stock Exchange; 150x240 feet; fireproof construction; plans by C. D. Hill & Co. (E. F. Gilke, manager of Houston office), 1214 Carter Bldg., Houston, Fort Worth and Dallas, Tex.; details not perfected. (Recently noted.)

Tex., Yoakum.—Stable.—W. Lander will erect stable building to replace recently burned structure; one story; cost \$5000.

W. Va., Wheeling.—Hospital.—North Wheeling Hospital, Sister Mary Dominick, acting Mother Superior, plans to erect additional wing to hospital and install additional equipment, etc.; Dr. J. A. Campbell, chairman of committee.

RAILWAY STATIONS

Ala., Ensley.—Birmingham Southern Railroad, J. B. McIntyre, chief engineer, Ensley, Ala., will erect freight and passenger depot.

Ala., Selma.—Southern Railway, B. Herman, chief engineer, 1300 Pennsylvania Ave. N. W., Washington, D. C., will soon begin erection of proposed freight depot.

Ark., Texarkana.—St. Louis, Iron Mountain & Southern Railroad, E. F. Mitchell, chief engineer, St. Louis, Mo., and Texas & Pacific Railway, R. L. Holmes, division engineer, Marshall, Tex., will erect freight depot; cost \$25,000 to \$30,000.

Ky., Bowling Green.—Louisville & Nash-

ville Railroad, W. H. Courtenay, chief engineer, Louisville, Ky., will, it is reported, probably erect \$75,000 two-story passenger station at Adams and Main Sts., and freight depot on Main St. near Clay St.

N. C., Concord.—Southern Railway, B. Herman, chief engineer, 1300 Pennsylvania Ave. N. W., Washington, D. C., submitted plans to R. A. Brown's Sons, Charlotte, N. C., who will estimate on construction of passenger station; 127x30 feet; red brick and stone; waiting-room for white passengers 30x45 feet; for negroes 22x30 feet; ticket office 35x16 feet; express room 15x16 feet; baggage room 15x30 feet; eaves will extend about six feet; will receive bids January 30; awarded contract to Porter & Boyd, Charlotte, N. C., for grading. (Previously noted.)

N. C., Tarboro.—Atlantic Coast Line Railroad Co., E. B. Pleasants, chief engineer, Wilmington, N. C., will probably erect station.

S. C., Greenwood.—Piedmont & Northern Railway, W. S. Lee, vice-president, Charlotte, N. C., will erect freight depot; cost about \$20,000.

Tenn., Buntyn.—Southern Railway, B. Hermann, chief engineer, 1300 Pennsylvania Ave. N. W., Washington, D. C., is having plans prepared by Alsop & Smith, Memphis, Tenn., for depot near Normal School, near Buntyn; red brick trimmed with stone; will contain general offices, two waiting-rooms, operator's room and freightroom; cost \$10,000.

Tenn., Johnson City.—Southern Railway, B. Hermann, chief engineer, 1300 Pennsylvania Ave. N. W., Washington, D. C., will, it is reported, erect freight and passenger depot.

Va., Chatham.—Southern Railway, B. Hermann, chief engineer, 1300 Pennsylvania Ave. N. W., Washington, D. C., plans to improve depot.

SCHOOLS

Ala., Albertville.—Trustees of Seventh District Agricultural School plan to rebuild school building reported burned.

Ala., Birmingham.—Tennessee Coal, Iron & Railroad Co. will erect school. (See "Dwellings.")

Ala., Linden.—City will erect school; brick; sold \$10,000 of bonds. Address The Mayor.

Ala., Newton.—B. P. Poyner, president board of trustees of Baptist Collegiate Institute, will let contract during spring or summer to rebuild school; nine rooms; ordinary construction; steam heat; cost \$12,000; plans by Okel & Cooper. (Recently reported burned.)

Ala., Newton.—Baptist Collegiate Institute trustees will erect school building to replace burned structure; cost \$12,000. (Recently reported burned.)

Ala., Florence.—C. W. Ashcroft, Mayor, states that no public-school building is contemplated. (Recently noted.)

Ark., Argenta.—School Board plans to begin construction in about 90 days on proposed high school.

D. C., Washington.—District Commissioners plan to erect school in Northwest Washington near Soldiers' Home; 12 classrooms, assembly hall, kindergarten, etc.; brick and reinforced concrete; cost \$100,000.

Fla., Tallahassee.—State Board of Control approved preliminary plans for dormitory and infirmary building at Florida State College for Women; cost \$52,000. (Previously noted.)

Ga., Columbus.—Secondary Industrial Institute, C. A. Maupin, principal, will not at present erect mechanical and engineering building. (Recently noted as having tentative plans.)

Ga., Macon.—Morris Brown College of Atlanta, Ga., purchased 632 acres of land on Clinton Rd. near Central City College; will erect buildings and establish branch college, erect home for aged and disabled negroes and develop portion of property for negro settlement.

Ky., Barbourville.—Barbourville Graded School District No. 1 will vote February 2 on bond issue to erect graded school. Address District School Trustees.

Ky., Jackson.—City will erect graded school. Address The Mayor.

La., Lockport.—Lockport school district voted \$30,000 bond issue to erect high school; W. S. Lafargue, Parish School Superintendent, Thibodaux, La. (Previously noted.)

La., Raceland.—Second District School Board of Lafourche parish proposes erection of \$25,000 school; voted bond issue. (Recently noted.)

La., New Orleans.—Our Lady Star of the Sea Church, Rev. Father Charles, pastor, plans to erect combined school and church building.

Md., Baltimore.—School Board will erect 16-room addition to No. 83 school at Lakewood Ave. and Orleans St.; cost about \$100,000; Benj. B. Owens, 1005 Continental Bldg., supervisor of school buildings. (Recently noted as having \$90,000 appropriation for 12-room addition.)

Miss., Hattiesburg.—Trustees of Forest County Agricultural High School will receive and examine plans for school and dormitory buildings on February 10; school to be two stories; brick; classrooms to accommodate at least 100 students; dormitory to be two stories; frame; capacity for 40 to 60 students. (Previously noted.)

Miss., Sharon.—Sharon district school trustees will probably rebuild graded school reported burned.

Mo., Kansas City.—City is planning to erect proposed Northeast High School. Address The Mayor.

N. C., Chapel Hill.—University of North Carolina, Dr. L. P. Venable, president, rejected all bids to erect Peabody and dormitory buildings; will have plans changed and receive new bids; former structure to cost \$40,000; latter to be three stories; erected in sections, each to accommodate 24 students. (Previously noted.)

N. C., Durham.—Durham County Board of Education will open bids and let contract February 5 to erect school in West Durham; 13 rooms; brick; ordinary construction; heating and lighting undecided; cost \$15,000 to \$20,000; to be completed by August 15; C. W. Massey may be addressed. (Recently noted.)

N. C., Greensboro.—City sold \$30,000 bond issue and will soon begin erection of proposed school. Address The Mayor. (Previously noted.)

N. C., Wilkesboro.—Town will vote February 6 to erect school. Address Town Commissioners.

Okla., Apache.—City voted \$9000 bond issue to erect consolidated school. Address The Mayor.

Okla., Guthrie.—Methodist University will award contract 2 P. M. February 7 through Arthur G. Dole, architect, to erect administration building; bids being received; cost about \$100,000. (Previously noted.)

Okla., Tulsa.—City will probably vote February 20 on \$300,000 bond issue to erect high school, ward building in Kendall College addition, additions to Owen & Lindsey schools and to purchase grounds for North Side, Lynch and Forsythe ward schools. Address The Mayor.

Tenn., East Lake.—School Board has plans by Huntington & Sears, Chattanooga, Tenn., for school.

Tenn., Hohenwald.—John A. White, superintendent of Lewis county, may be addressed relative to bond issue of \$10,000 recently reported voted for school improvements.

Tex., Frankston.—School Board has plans by J. F. Watson for school; two stories; seven rooms; cost \$3000. (Previously noted.)

Tex., Texline.—School Board, F. W. Spann, chairman, will receive bids until 6 P. M. January 20 to erect two-story brick school for District No. 1; cost about \$14,000; information on application to Mr. Spann.

Tex., Van Vleck.—Van Vleck School District voted \$6000 bond issue to erect school. Address District School Trustees.

Va., Abingdon.—Martha Washington College will erect \$25,000 dormitory; plans by Baumann Bros., Knoxville, Tenn., and construction under supervision of A. G. Kizer, Tazewell, Va. (Recently noted.)

Va., East Radford.—W. T. Baldwin, chairman, asked bids for excavating only for administration building at State Normal School; 135x128 feet; semi-fireproof construction; indirect steam or hot-water heat; electric lighting; cost \$75,000; plans by Charles M. Robinson, Richmond, Va. (Previously noted to erect college buildings to cost \$150,000 to \$200,000.)

Va., Emory.—Emory & Henry College has plans by C. B. Kearfoot, Bristol, Va.—Tenn., for college building; 177x107 feet; ordinary construction; steam heat; electric lighting; cost \$75,000; S. B. Vaught, Johnson City, Tenn., may be addressed. (Previously noted.)

Va., Emory.—Emory & Henry College is planning erection of proposed central college building to cost about \$100,000; 177x58 feet; A. G. Kizer, Tazewell, Va., will probably superintend construction. (Recently noted.)

W. Va., Castro.—City is having plans prepared by C. W. Bates, Wheeling, W. Va., for proposed high school; brick, stone and reinforced concrete; cost \$40,000.

STORES

Ala., Birmingham.—W. E. Perryman will erect two buildings at Second Ave. and Cleveland St., Woodlawn; two stories; frame; cost \$4500.

Ala., Ensley.—Dr. E. T. Fields will erect store building at Avenue F and 19th St.; one story; brick; 50x100 feet; three stores.

Ala., Ensley.—J. H. Perkins will erect business building to replace structure at Avenue E and 20th St.; brick.

Ala., Tuscaloosa.—C. B. Verner, W. B. Oliver and Mrs. M. T. Cotter are planning to erect business building; brick.

Ark., Arkadelphia.—R. W. Huie, president of Citizens' National Bank will erect department store; also reported to erect bank and hotel building; two stories; lower floor for bank and upper floor for hotel; cost \$20,000.

D. C., Washington.—J. G. Bowen, 1127 12th St. N. W., will expend \$6000 to repair building at 627 New York Ave.

D. C., Washington.—H. R. Howenstein, 1314 F St. N. W., will erect store and dwelling at 1340 G St. S. E. (See "Dwellings.")

D. C., Washington.—James Strayer, 1342 New York Ave. N. W., will erect four one-story stores at 1405-11 Irving St. N. W.; cost \$4000.

Ky., Lexington.—Milton Young will erect nine stores; one story; 15x30 feet; cost about \$25,000.

La., Lake Charles.—Von Phul & Gordon will expend \$24,000 for improvements to store at Pujo and Ryan Sts., including new tile floors, etc.

La., Lake Charles.—Leon Sugar will erect business building at Bilbo and Broad Sts.; two stories; brick.

La., Doyle.—S. S. McDonald will rebuild store recently reported burned.

La., Hammond.—T. Summer Baltzell will erect building to replace burned structure; one story; four stores under one roof. (Recently reported burned.)

La., Washington.—J. Franklin Schell, representing Union Irrigation Canal Co., will erect commercial and office building.

Md., Baltimore.—J. G. McCrory & Co., New York, represented east of Pittsburg, Pa., by B. Howard Richards, 308 Equitable Bldg., Baltimore, will erect store building at 207-09-11 W. Lexington St.; two or more stories; further details not determined; will begin construction about April 1.

Md., Baltimore.—Charles Libowitz, 758 Columbia Ave., will erect store and dwelling at 760-82 Columbia Ave.; two stories; 26x37 feet; brick; cost \$3000.

Md., Baltimore.—Robert Kinnier, 315 W. Fayette St., purchased property at 415 W. Fayette St. and will improve for carriage and wagon repository and salesroom.

Miss., Hattiesburg.—Dr. S. B. Culpepper of Bond, Miss., will enlarge building on Pine St. by extending same 70 feet in rear.

Mo., Kansas City.—F. S. Curtis will erect business building.

Mo., Kansas City.—H. M. Evans will erect building at 1113-15 Walnut St.; five stories; 50x110 feet; cost \$75,000; will be occupied by Felix & Sons Clothing Co.

N. C., Charlotte.—T. W. Wade will expend \$3500 to erect new front and remodel interior of building at 200-11 W. Trade St.

N. C., Elizabeth City.—Hinton Bros. will erect business building.

N. C., Hendersonville.—Dr. H. A. Morey and F. V. Hunter will erect business building; will have plans prepared by H. C. Meyer, Hendersonville.

N. C., Lenoir.—G. L. Bernhardt is having preliminary plans prepared by J. S. Zimmerman, Lenoir, for business building.

S. C., Columbia.—Southern States Supply Co. will rebuild store; plans not determined. (Recently reported burned.)

Okla., Skiatook.—A. K. Feigly will erect store building; brick.

Tenn., Henning.—James B. Coker will erect store building; brick.

Tenn., Pulaski.—T. W. Pitman will, it is reported, erect business building; concrete construction.

Tex., Aransas Pass.—Albert Warren of El Paso, Tex., will erect building; three stories; brick.

Tex., Amarillo.—T. W. Stanford will rebuild store and dwelling; 24x45 feet and 36x52 feet; cost \$3200. (See "Dwellings.")

Tex., Brownsville.—B. G. Stegman has plans by A. Goldammer, Harlingen, Tex., for stores and office building; two stories; 95x120 feet; brick, steel and lumber; electric lighting; cost \$20,000; will build by force account. (See "Machinery Wanted.")

Tex., Coleman.—F. T. Enos will rebuild store; 25x104 feet; fireproof construction; electric lighting; cost \$5000. (Recently noted.)

Tex., Dallas.—Harris-Lipsitz Company will erect addition to business building; five stories; construction similar to present structure; plate-glass front; vaults; steam heat; cost about \$75,000; plans by C. D. Hill & Co., Dallas.

Tex., Ennis.—Binkey-Clark Hardware Co. purchased building adjoining present location and will enlarge, remodel and connect same with present store.

Tex., Ennis.—Allen & Kendall will erect business building; three stories; brick; 50x115 feet; electric elevator; cost about \$20,000.

Tex., Houston.—J. W. Metzler and Karl Treschwig will soon open bids to erect business building; 50x100 feet; ordinary construction; cost \$5000; address Mr. Metzler. (Recently noted.)

Tex., Houston.—M. E. Foster will erect seven business buildings at LaBranch and Texas Sts.

Tex., Houston.—Otho Houston Bldg. will be enlarged from three to five stories and additional space has been leased by Burton Dry Goods Co.; additional stories of stone to conform with present structure.

Tex., Sherman.—C. E. Craycroft has not definitely arranged plans to erect business building on S. Crockett St. recently reported.

Tex., Yoakum.—G. H. Melmar will erect store building to contain three stories; 90x30 feet.

THEATERS

Ky., Lexington.—James B. Haggin is promoting organization of company with \$100,000 capital stock to erect theater on Main St. opposite Phoenix Hotel; about 110x132 feet; entrance through arcade.

Mo., Carthage.—E. B. Jacobs and J. P. Leggett are interested in erection of theater and hotel building. (See "Hotels.")

N. C., Hickory.—J. W. Blackwell will erect moving-picture theater to be leased by J. L. Stone and Hugh D'Anna.

Tex., Austin.—Lloyd Spencer, manager of Plaza Hotel, San Antonio, Tex., is reported as planning to erect theater.

WAREHOUSES

Ala., Montgomery.—Atlantic Compress Co., Atlanta, Ga., will establish warehouse with capacity of 10,000 bales of cotton.

Ga., Atlanta.—F. J. Cooleedge will open bids in about six weeks or two months to erect warehouse; 75x152 feet; reinforced concrete; steam heat; electric lighting; install large elevator; cost \$50,000. (Recently noted.)

La., New Orleans.—City is having plans prepared by J. F. Coleman, consulting engineer for Dock Board, for proposed public warehouse system; reported capacity 250,000 bales.

Md., Baltimore.—J. S. Young Company, Boston and Elliott Sts., is receiving bids through C. M. Anderson, architect, 324 N. Charles St., Baltimore, for warehouse; brick construction.

Tenn., Paris.—Henry County Farmers' Union plans to erect warehouse.

Tex., Houston.—Waddell Furniture Co. is having plans prepared by C. D. Hill & Co. (E. T. Click, manager of Houston office), 124 Carter Bldg., Houston, Fort Worth and Dallas, Tex., for warehouse; 200x250 feet; reinforced concrete construction; cost \$40,000; date of opening bids not set.

Tex., Scotland.—C. H. Herman of Sandersville, Ga., is promoting erection of warehouse. (See "Bank and Office.")

Tex., Waco.—Sid Burrows will erect warehouse at 13th and Mary Sts.; 85x125 feet.

W. Va., Huntington.—J. Brob, 935 Third Ave., has plans by V. T. Ritter, Huntington, for warehouse; 86x36 feet; four stories; fireproof construction; electric freight elevator; cost \$10,000; bids opened about January 18. (Recently noted.)

Ridgway Dynamo & Engine Co.'s New Pittsburgh Office.

In order to facilitate the handling of its various lines of steam engines and electrical apparatus, the Ridgway Dynamo & Engine Co. of Ridgway, Pa., has recently opened a district office in the Oliver Bldg., Pittsburgh. The manager of this office is J. F. Rodgers, a native of Pittsburgh, and a man of wide acquaintance among the mines, mill and manufacturing interests of Pittsburgh and vicinity. Mr. Rodgers is prepared to render any possible service on behalf of the company through this new office.

BUILDING CONTRACTS AWARDED

APARTMENT-HOUSES

Ga., Atlanta.—E. A. & T. J. Peoples awarded contract to Charles Bernhardt to erect apartment-house; two stories; mill construction; steam heat; electric lighting; cost \$12,000. (Recently noted under "Stores.")

N. C., Wilmington.—C. W. Polvogt awarded contract to James A. Lewis, 711 N. 5th St., Wilmington, to erect apartment-house and store; 61x66 feet; frame; electric lighting; cost \$9,000; plans by Grossmann & Mahler Architectural & Construction Co., Wilmington. (Recently noted.)

ASSOCIATION AND FRATERNAL

Md., Baltimore.—Young Women's Christian Association, central branch, Park Ave. and Franklin St., awarded contract to John Cowan, 106 W. Madison St., Baltimore, to alter building at 129 Barre St. for association purposes; cost \$3,200.

BANK AND OFFICE

N. C., Raleigh.—Commercial National Bank awarded contract to John T. Wilson, Richmond, Va., to erect bank and office building; 91x81 feet; 10 stories and basement; fireproof construction; steam heat; prismatic side-walks; electric traction elevator; cost \$220,000; plans by P. Thornton Marye, Atlanta, Ga. (Previously noted.)

CHURCHES

Tenn., Memphis.—First Church of Christ, Scientist, Dunlap St. and Monroe Ave., awarded contract to D. M. Crawford & Co., Memphis, to complete edifice at cost of about \$44,000; Sunday-school rooms constructed several years ago; plans by Jones & Furlinger, Memphis, call for structure of buff brick with stone and terra-cotta trimmings; seating capacity of main auditorium and balconies about 700.

CITY AND COUNTY

Ala., Livingston.—Jail.—Sumter county awarded contract to erect jail; hot-water heat; electric lights; cost \$16,000; plans by Frederick Ausfeld, Montgomery, Ala. (Recently noted.)

La., Lake Charles.—Jail.—Calcasieu Parish Police Jury awarded contract at \$26,230.50 to Delatt & Lagrange, Lake Charles, to erect jail; two stories; brick and steel; fireproof; plans by Favrot & Livaudais, 839 Gravier St., New Orleans, La. (Recently noted.)

DWELLINGS

Ala., Birmingham.—Tennessee Coal, Iron & Railroad Co. awarded contract to erect 150 four-room houses at camp No. 12; to be equipped with running water; sewerage connection; will erect brick school, brick churches, bathhouse, provide parks, playgrounds, etc. (Recently reported under Ala., Ensley.)

Ala., Montgomery.—W. D. C. Kessler awarded contract to Hugger Bros. of Montgomery to erect proposed dwelling; cost \$15,000; plans by Frederick Ausfeld, Montgomery.

Fla., Tampa.—H. T. Lykes awarded contract to B. F. Walker, Tampa, to erect residence in Hyde Park; two stories; 47x50 feet; tile roof.

Mo., St. Louis.—George J. Rupp, 1941 E. Warne Ave., awarded contract to J. F. Rupp Building & Contracting Co., St. Louis, to erect dwelling; 27x36 feet; mill construction; hot-water heat; electric lighting; cost \$4,000; plans by E. F. Nolte, Fullerton Bldg., St. Louis; all contracts let. (Recently noted.)

Tex., Bay City.—Z. W. de Lano awarded contract to erect residence.

Tex., Bay City.—Dr. T. C. Brooks awarded contract to erect residence in West Bay City; two stories.

Tex., El Paso.—Harry Corning, El Paso, has contract to erect 31 dwellings, ranging in dimensions from 26x48x70 feet to 50x80x40 feet; ordinary construction; hot-air heat; cost \$3,000 each.

Tex., Houston.—T. L. Denman, 616 Union National Bank Bldg., has plans by and awarded contract to Berry & Cook, Houston, to erect dwelling; eight rooms; ordinary construction; cost \$6,000. (Recently noted.)

Tex., Taylor.—Dr. R. E. Bledsoe awarded contract to erect residence; cost \$5,000 to \$6,000.

Va., Norfolk.—N. B. Joynes awarded contract to R. H. Richardson & Son, Hampton, Va., to erect residence; brick; cost \$37,000.

Va., Richmond.—A. Kramer awarded contract to Davis & Archer, 2515 Hanover Ave.,

Richmond, to erect two eight-room dwellings; brick; hot-water heat; cost \$4,000 each; plans by Davis Bros., 2514 W. Main St., Richmond. (Recently noted under "Apartments.")

GOVERNMENT AND STATE

Tex., Abilene.—Hospital.—Directors of State Epileptic Colony awarded contract to erect cottage; ordinary construction; brick; steam heat; cost \$10,000; plans by William P. Preston, Abilene; contract awarded at \$3,000 to E. L. Norton, Abilene, for plumbing.

HOTELS

S. C., Columbia.—Gresham Hotel Co. awarded contract at \$86,837 to Mackle-Crawford Construction Co., Atlanta, Ga., to erect Gresham Hotel at Main and Wheat Sts.; six stories; red brick with granite and limestone trimmings; Italian Renaissance style; fireproof construction; standpipe in center of building with hose connections; 42x150 feet; lobby 42x50 feet, with tile floor, panel wainscoting and vaulted ceiling; steel frame; walls and floors of hollow terra-cotta blocks; iron staircases from rear of corridors upper five floors to ground; elevators enclosed in wire glass; 75 of 85 bedrooms connected with private baths; refrigerating plant in basement; plans by Sompayrac & Wilson, Columbia; sub-bids invited on structural steel, plumbing, electric wiring, heating, etc. (Previously noted. See "Machinery Wanted.")

MISCELLANEOUS

D. C., Washington.—Clubhouse.—University Club awarded contract to F. T. Nesbit & Co. to erect university clubhouse; 72x86 feet; six stories; fireproof construction; direct and indirect steam heat; electric lighting; cost \$200,000; plans by George Oakley Totten, Jr., 808 17th St. N. W., Washington. (Contract previously noted awarded to George A. Fuller Company of Washington.)

Ky., Middlesboro.—Stable.—J. Frank White awarded contract to Wilson Bros., Middlesboro, to erect stable building on 18th St.; two stories; brick; fireproof; 50x280 feet; solid concrete foundation.

Md., Baltimore.—Hospital.—Maryland Homeopathic Hospital awarded contract to Harry H. MacLellan, 15 E. Fayette St., Baltimore, to erect addition to hospital at 1122 N. Mount St.; two stories; brick. (Previously noted.)

RAILWAY STATIONS

Tex., Bells.—Texas & Pacific Railway, B. S. Wathen, chief engineer, Dallas, Tex., and Missouri, Kansas & Texas Railway System, S. B. Fisher, chief engineer, St. Louis, Mo., will expend \$10,000 to erect union passenger station; 100x100 feet; semi-fireproof construction; plans by Engineering Department, Texas & Pacific Railway; contract awarded to James J. Molloy (not James J. Maloney, as recently stated), 307 Juanita Bldg., Dallas, Tex. (See "Machinery Wanted.")

SCHOOLS

Fla., Gainesville.—Gainesville Sub-District No. 26, J. L. Kelly superintendent, awarded contract to Winston Bros., Ocala, Fla., to erect University high school; 106x53 feet; three stories and basement; steam heat or steam blast system of heating; clay and tile roof; metal ceiling; iron fire-escapes; frame interior; pressed-brick exterior; plans by Willis R. Biggers, Tampa, Fla. (Previously noted.)

Fla., Gainesville.—State Board of Control awarded contract at \$39,800 to Holladay & Crouse, Greensboro, N. C., to erect agricultural building and dining-hall at University of Florida, and at \$3658 to Gainesville Hardware Co. for heating; plans by W. A. Edwards, Atlanta, Ga.; also approved preliminary plans for educational building provided for in Peabody fund, to cost \$40,000. (Recently noted.)

La., Vidalia.—Concordia Parish School Board will expend \$16,455 to erect high-school building; 55x90 feet, with L 24x48 feet; one story; mill construction; brick; hot-water heat; electric lighting; plans by Stevens & Nelson, New Orleans, La.; contract recently noted awarded to Paine & Jones, Fort Smith, Ark.

STORES

Ala., Birmingham.—Jemison Real Estate Co. awarded contract to erect store and warehouse for Diamond Rubber Co. (See "Warehouses.")

Ala., Woodlawn, Station Birmingham.—J. Dillard awarded contract to Mr. Powers,

East Lake, Station Birmingham, to erect three brick stores on 55th St.

Fla., Plant City.—W. B. Herring awarded contract to Pemberton Chapman, Plant City, to erect business building; two stories; pressed brick, with marble trimmings; cost \$15,000. (Previously noted.)

Fla., Tallahassee.—Levy Bros. awarded contract to E. B. Dyer, Tallahassee, to erect two brick stores; 40x60 feet and 40x80 feet; cost \$6,000.

La., Coshatt.—Carter Bros. awarded contract to J. B. Randolph, Coshatt, to erect store to replace structure reported burned; brick; 35x100 feet; cost \$4,000.

Mo., St. Louis.—Simon Lasky awarded contract to Sol Abrahams & Sons, St. Louis, to erect store building at 1406 Franklin Ave.; two stories; steel and glass front; elevator; cost \$15,000.

N. C., Wilmington.—C. W. Polvogt awarded contract to James A. Lewis, 711 N. 5th St., Wilmington, to erect store and apartment building recently noted. (See "Apartments.")

Tex., Bay City.—A. L. Shultz, Bay City, has contract to erect proposed Gaines Bldg.; brick construction.

Tex., Bryan.—J. Allen Myers will erect three-story business building instead of two-story structure, as recently planned. (Recently noted to have awarded contract to C. H. Winn, Houston, Tex., to erect two-story building.)

Tex., Crockett.—W. M. Patton awarded contract to C. M. Beuchman, Crockett, to erect four brick stores; 25x80 feet; cost \$15,000. (Previously noted.)

Tex., Dallas.—Sakowitz Bros. awarded contract to remodel store, including new front, etc.

RAILROAD CONSTRUCTION

RAILWAYS

Ala., Demopolis.—The Alabama & Northwestern Railroad Co., capital \$160,000, has been incorporated by John T. Cochrane of Mobile and others to operate the Vredenburgh Lumber Railroad from Pine Hill to Sweetwater, Ala. It may be extended. Officers: John T. Cochrane, president; W. G. Cochrane, vice-president; W. M. Toxey, chief engineer; K. R. Guthrie, secretary. J. T. Cochrane is president of the Tombigbee Valley and the Alabama, Tennessee & Northern railroads.

Ala., Eufaula.—D. B. McKenzie of Eufaula is reported engaged to survey for the proposed Eufaula & Chattahoochee Valley Railroad from Eufaula to Pittsview, about 21 miles. J. P. Foy of Eufaula is president.

Ala., Mobile.—R. E. Warren and E. E. Posey, for the West Shore Traction Co., it is reported, have applied for permit to erect bridge over Dog River and viaduct over Fulton Rd.

Ark., Little Rock.—Col. C. C. Godman of Fort Smith, Ark., says a report, has proposed to the Board of Trade of Little Rock to build the desired railroad from Little Rock to a connection with the Missouri & North Arkansas Railroad, constructing 25 miles, complete with equipment, for \$150,000, and he proposes an absolutely independent company. H. L. Remmel is president and George R. Brown secretary of the Board.

Ark., Marianna.—The Missouri Pacific is reported pushing construction rapidly on the cutoff between Marianna and Memphis, and it is hoped to operate it in about three months. Track is laid from Marianna to the St. Francis River, and grade is 75 per cent. done between the river and Bridge Junction.

Ark., Rogers.—The Kansas City & Memphis Railway will, it is reported, complete its Fayetteville extension by April 1 and will then begin construction toward Memphis. M. Hays is chief engineer.

Ark., Pine Bluff.—The Anderson & Saline River Railroad, it is reported, contemplates an extension to Leola, Ark., on the Rock Island Lines; also an extension of 14 miles to Pine Bluff. J. H. Allen is vice-president and general manager, J. S. Bell chief engineer, both of Pine Bluff.

Ark., Stuttgart.—The Stuttgart & Southern Railroad Co. is reported organized with George C. Lewis of Stuttgart, president (who is also president of the Stuttgart & Rice Belt Railroad), to build a line from Stuttgart south to the Arkansas River, about 25 miles. J. I. Porter is vice-president and J. J. Reading, secretary.

D. C., Washington.—Construction is expected to begin within a month on the Washington, Spa Spring & Gretna Railway, par-

Tex., Lubbock.—M. E. Merrill awarded contract to A. O. Harvey of Fort Worth, Tex., to erect business building; one story and basement; 125x115 feet; cost \$17,000; heating contract not awarded.

Tex., Port Arthur.—Ross Bros., Beaumont, Tex., awarded contract to Warren McDaniel, Port Arthur, to erect business building; cost \$10,000.

Tex., Runge.—Geheart & Misom awarded contract to erect business building; brick.

THEATERS

Ky., Lexington.—J. H. Stamper, Jr., awarded contract at \$11,284 to Congleton Lumber Co., Lexington, to erect proposed Orpheum Theater at Main & Limestone Sts., and at \$1444 to Hendricks-Moore-Young Company, Lexington, to place girders for partitions; completion in 90 days; total cost, including furnishings, \$15,000 to \$16,000.

Ky., Louisville.—Ideal Amusement Co., F. J. Dolle, president, 23d and Market Sts., awarded contract to Bredeman Bros., Louisville, to erect theater; 78x146 feet; cost \$40,000; plans by S. P. Ostrander, 2912 Virginia Ave., Louisville; all contracts let. (Recently noted organized by Mr. Dolle and others.)

WAREHOUSES

Ala., Birmingham.—Jemison Real Estate Co. awarded contract to Realty Construction Co., Birmingham, to erect warehouse and store for Diamond Rubber Co.; two stories; brick; 45x90 feet; plans by Wm. C. Weston, Birmingham; cost \$10,000.

Fla., Tampa.—Coca-Cola Co., main office, Atlanta, Ga., awarded contract to T. B. Sherrill, Tampa, to erect building at Cass and Pierce Sts.; cost \$11,000. (Lately noted.)

ties interested being quoted saying that rails are ordered for line between Berwyn and Charlton Heights, Md. I. H. Saunders, 1407 F St., Washington, D. C., may give information.

Fla., Haines City.—The Atlantic Coast Line is reported to be operating its new line from Haines City as far as Crooked Lake.

Fla., Monticello.—Superintendent M. Riddle of the Atlantic Coast Line, Jacksonville, Fla., is quoted saying that the company will build the proposed lines between Monticello and Perry, Fla., 33 miles, and also from Oldtown on the Suwanee River to Dunnellon, Fla., 42 miles, to make a short route from the West to Tampa, Fla. Some time ago the road was reported making surveys through this region. E. B. Pleasant, Wilmington, N. C., is chief engineer.

Fla., Pace.—Reported that Martin Lindsey and others have acquired the railroad and timber of Pace Bros in this (Santa Rosa) county and may extend the line.

Ga., Bostwick.—Construction is reported begun on the upper end of the Greene County Railroad (formerly the Bostwick Railroad) to make a line from Apalachee to Monroe. Davis & Hughes Bros., the contractors, are to complete seven miles between Bostwick and Goodhope in 60 days. The line is then to push on to Monroe and Loganville on the Seaboard Air Line. On the other end it is to extend from Apalachee on the Central of Georgia to Greensboro and Sparta. Forest Greene of Atlanta is president and W. D. Brannan of Bostwick, vice-president and general manager.

Ga., Brunswick.—The Atlanta, Birmingham & Atlantic Railway is reported announcing that \$100,000 worth of improvements will be made at Brunswick, and J. G. Basinger, civil engineer, of New York, is making preliminary surveys. Alex. Bonnyman, Atlanta, Ga., is general manager.

Ga., Cary.—H. R. Brown of Macon, president of the Cary North & South Railroad Co., is reported to have assembled construction forces and to have begun construction of the line at a point three miles from Cochran, Ga., on line from there to Danville, 18 miles. D. B. Dunn of Macon is chief engineer. T. W. Ellis, contractor, of Macon is reported to have 10 miles of the work and has grading outfit on it.

Ky., Paducah.—The Kentucky Southwestern Railway, Light & Power Co. has, it is reported, completed survey between Paducah and Henderson, Ky. H. C. Rhodes is president and E. F. Wheaton vice-president and general manager.

Ky., Malone.—The Ohio & Kentucky Railroad is reported to have completed an extension from Malone to Liberty Rd., three and one-half miles.

Ky., Owenton.—Charles Strother and others are reported organizing the Frankfort & Owenton Traction Co. to build an electric railway between the two points named.

Miss., Kaligier.—The Liberty-White Railroad is reported to have completed its extension from Kaligier to Bridges, three miles.

N. C., Winston-Salem.—Winston Township has voted \$100,000 of bonds to aid the proposed extension of the Randolph & Cumberland Railroad, of which D. A. McDonald is president and E. W. Shedd chief engineer, both at Carthage, N. C.

Okla., Guymon.—J. A. Margo of Boise City, Okla., and others are reported contemplating building an electric railroad from Guymon, Okla., to Clayton, N. M., about 120 miles.

Okla., Hammon.—The Wichita Falls & Northwestern Railway, says a report, has completed line between Hammon and Leedy, 19 miles, and put it in operation.

Okla., Muskogee.—The Fidelity Construction Co., capital \$100,000, with offices at 618 Bryant Bldg., St. Louis, Mo., J. W. Hoffman, president, has contract to build 300 miles of lines for the Missouri, Oklahoma & Gulf Railroad in Oklahoma and Texas, and expects to begin construction in February. Wm. Kenefick of Kansas City is president of the railroad, and J. J. Harrison chief engineer at Muskogee, Okla. Railroad is reported to have let contract for four large steel bridges over Grand and Spring rivers on the line from Wagoner, Okla., to Joplin, Mo. It has also filed mortgage to secure its \$20,000,000 of first mortgage 5 per cent. bonds, which will finance the proposed construction between Wagoner and Joplin, the first undertaking; also between Henryetta and Oklahoma City, Okla., and next between Denison, Dallas and Fort Worth, Tex.

Okla., Oklahoma City.—J. B. Berry, chief engineer of the Rock Island Lines, Chicago, says that while the company is considering the matter of track elevation and new passenger station at Oklahoma City, no decision has been reached.

Okla., Tulsa.—The Sand Springs Interurban Railway is reported to have begun construction of its belt line at Tulsa. W. H. Hendron of Tulsa is chief engineer.

S. C., Bamberg.—The Bamberg, Ehrhardt & Waterboro Railway is reported to have 11 miles graded out of 14 between Bamberg and Ehrhardt, and track laying is begun. The Ajax Construction Co., including Jones A. Williams and E. C. Hays of Bamberg and W. C. Wolfe of Orangeburg, S. C., have the contract. J. A. Wyman is president of the road; Thomas Black, vice-president, and W. D. Rhoad, secretary and treasurer.

S. C., Seneca.—The Southern Railway is reported surveying to build second track between Gainesville, Ga., and Charlotte, N. C., and contracts are said to be let between Cornelia and Gainesville. W. H. Wells is chief engineer of construction at Washington, D. C.

Tenn., Chattanooga.—J. W. Adams, who is reported interested in the Eastern Tennessee Power Co., is also reported planning construction of an electric railway from Chattanooga, Tenn., about 30 miles. The Union Development Co. is said to be interested in the proposed line.

Tenn., Chattanooga.—The improvements which the Southern Railway now contemplates at Chattanooga, including team tracks, etc., will be done under the direction of B. Herman, chief engineer maintenance of way and structures, Washington, D. C., and not under Maj. W. H. Wells, the chief engineer of construction, as was reported.

Tenn., Lewisburg.—An officer of the Sparks Contracting Co. is quoted saying that it has contract for six miles each way from Lewisburg on the new Lewisburg & Northern line of the Louisville & Nashville Railroad, and that work upon it will begin at Lewisburg January 24.

Tenn., Memphis.—J. B. Berry, chief engineer Rock Island lines, Chicago, says that after the necessary bill is passed by Congress work will begin promptly for the projected new bridge over the Mississippi River at Memphis and near the present Frisco system bridge. Plans are not yet prepared.

Tenn., Nashville.—E. V. Rawn, manager of the Walton-McDowell Company, railroad contractors, Brentwood, Tenn., says the company has been awarded 19½ miles of heavy work on the Louisville & Nashville Railroad of the Louisville & Nashville system, from a point near the Nashville water-works to a point near Clovercroft, Tenn. It includes about 1,000,000 yards of excavation and 10,000 yards of masonry. Work will begin immediately, to be done within two years. Possibly part of the steam-shovel work will be sublet.

Tenn., Russellville.—The Southern Railway,

it is reported, will build second track from Bulls Gap to a point about halfway between Russellville and Morrilton, with a branch to the Asheville route near Roe Junction. W. H. Wells, Washington, D. C., is chief engineer of construction.

Tenn., Waynesboro.—The Empire Lumber Co. of Pittsburgh, Pa., is reported contemplating the construction of a railroad in this (Wayne) county, Tenn.

Tex., Austin.—O. H. Crittenden, chief engineer of the International & Great Northern Railroad, Houston, Tex., says there is nothing in the report that the company will extend the Austin Dam & Suburban Railway.

Tex., Hillsboro.—A. M. Acheson, chief engineer of the Missouri, Kansas & Texas Railway of Dallas, Texas, says that the construction of second track from Hillsboro to Grainger, Tex., 96 miles, has been seriously considered, but it is decided not to undertake the work this year.

Tex., Dallas.—The Texas Electric Co. of Dallas, capital \$100,000, is incorporated to promote and construct street and suburban railways, light and power plants, etc. Directors, J. V. Watkins, president; R. M. Nunley, vice-president; E. H. Conibear, secretary; A. Ragland, treasurer; R. D. Pelton, J. J. Sears, Frank Peacock, A. J. Dossett, A. F. Bentley, Mendel Booth and Ed. Foy. Messrs. Nunley, Ragland and Watkins are the executive committee.

Tex., Dallas.—The Frisco system is reported to have filed a trust deed for \$250,000 under the name of the Red River, Texas & Southern Railway Co., which, it is locally rumored, is for a union station at Dallas. F. G. Jonah is chief engineer of construction at St. Louis, Mo.

Tex., Fowlerton.—J. E. Franklin of St. Louis, president of the Crystal City & Uvalde Railroad, is quoted saying that construction of a line from Fowlerton to the Gulf is contemplated, but that bonuses will be asked. A. R. Ponder is vice-president and general manager and E. Breaker, chief engineer, both at Crystal City, Tex.

Tex., Goliad.—J. C. Burns, W. B. Campbell and J. H. Pittman have been appointed to obtain subscriptions for the proposed railroad.

Tex., Memphis.—W. W. West of Houston, Tex., it is reported, has proposed to Memphis Commercial Club to build the contemplated railway from Memphis to Lubbock. With C. L. Sloan and Sam Houston he has investigated the right of way.

Tex., Crockett.—Smith Bros., contractors, are reported to have begun construction of the Government railroad from Crockett to the Government dam at Hurricane Shoals.

Tex., Mission.—Construction has begun, says a report, on the extension of the San Benito Interurban Railway from Mission to Monte Christo.

Tex., Riviera.—Theo. F. Koch & Co. of 406-408 Binz Bldg., Houston, Tex., and with local offices at Riviera and other points, advise that they have decided to build a motor railroad from Riviera Station, on the St. Louis, Brownsville & Mexico Railway, to Riviera Beach, about 10 miles. The firm will own the line and it will be operated by a construction company. A press report says that S. A. Robertson of the San Benito Interurban Railway Co., San Benito, Tex., will build the line for the firm.

Tex., San Antonio.—Percival & Son of Rockport, Tex., are reported to have begun survey there to locate route for the proposed San Antonio, Rockport & Mexican Railway, promoted by A. L. Matlock of San Antonio and others, as recently reported. E. R. Russell of San Antonio, Tex., is president.

Tex., San Antonio.—The San Antonio & Aransas Pass Railway, it is reported, will soon let contract to lay heavy rails on 40 miles between Yoakum and Houston, Tex. J. S. Peter, San Antonio, Tex., is vice-president and general manager.

Va., Floyd.—The Floyd Electric Power Co., recently chartered with S. G. Proffitt as president, capital \$12,000, contemplates, it is further reported, the construction of a railway from Floyd to either Radford or Christiansburg, Va.

Va., Newport News.—The New Port News and Old Point Railway & Electric Co. is reported acquired by Allen & Peck, Inc., traction experts of New York, and C. Loomis Allen was elected president and Edward F. Peck, vice-president. Improvements and extensions are said to be contemplated. W. J. Payne of Richmond, Va., is chairman of the board.

Va., Norfolk.—The Virginia Railway, according to reports from New York, proposes to issue \$29,000,000 of new 5 per cent. cumulative preferred stock, and it is rumored may

undertake construction of new line from Deepwater, W. Va., to another road for a connection to the Lakes. H. Fernstrom, Norfolk, Va., is chief engineer.

Va., Norfolk.—The Norfolk & Portsmouth Belt Line is reported negotiating for right of way in Berkeley ward for an extension. G. S. Shafer is superintendent at Port Norfolk, Va.

Va., Roanoke.—The Norfolk & Western Railway, according to announcement from New York, will issue about March 1 from \$12,000,000 to \$13,000,000 of 4 per cent. 20-year convertible bonds to finance double-tracking and other improvements, including new equipment, during the next two years. L. E. Johnson is president and C. S. Churchill, chief engineer, both at Roanoke, Va.

W. Va., Charleston.—The Gauley River Railroad Co., it is announced, will organize February 3 at Room 511 Coyle and Richardson Bldg., Capitol and Lee Sts., Charleston, and stock subscription books are now open. The incorporators are George E. Price, Buckner Clay, J. Edmund Price, R. M. Price and R. S. Spilman.

W. Va., Charleston.—The Hominy Creek Railroad Co., it is announced, will organize February 3 at Room 511 Coyle and Richardson Bldg., Capitol and Lee Sts., Charleston, and stock subscription books are now open. The incorporators are George E. Price, Buckner Clay, J. Edmund Price, R. M. Price and R. S. Spilman.

W. Va., Harpers Ferry.—The Baltimore & Ohio Railroad, it is reported, will build a third track from Engle's in this (Jefferson) county to near Weverton, Md. F. L. Stuart, Baltimore, is chief engineer.

W. Va., Rowlesburg.—F. L. Stuart, chief engineer Baltimore & Ohio Railroad, says it is not at present contemplated to build a branch to Beaver Hole, on Cheat River.

W. Va., Wheeling.—The Wheeling & Elm Grove Railway is reported contemplating

an extension from West Alexander to Clayville. J. W. Smith, Wheeling, W. Va., is general manager.

STREET RAILWAYS

Ark., Pine Bluff.—The Citizens' Light & Transit Co., it is reported, has arranged to build three miles of additional trackage in different parts of the city. James H. Allen is secretary.

Ark., Pine Bluff.—The Citizens' Light & Transit Co. is reported sold to the Pine Bluff Corporation, of which H. R. Dennis of New York, vice-president of the Equitable Securities Corporation Co., is president, and that extensive improvements will be made. James H. Allen of Pine Bluff is secretary of the Citizens' Light & Transit Co.

Ga., Macon.—The Macon Railway & Light Co. proposes some connections and extensions, to make which franchises are asked of the City Council. W. J. Massee is president of the company.

Ky., Louisville.—The Louisville Railway Co. has purchased the franchise for the cross-town line to be seven miles long, and construction is to begin early in the spring. T. J. Minary is president.

Miss., Laurel.—S. M. Jones, secretary, says that the Laurel Light & Railway Co. has not yet completed estimates in connection with the construction of the street railway.

N. C., Charlotte.—The Charlotte Electric Railway Co., it is reported, contemplates an extension to the Mecklenburg Country Club.

Tex., San Angelo.—J. D. Sugg, owner of the San Angelo Street Railway, will, it is reported, build two miles of additional lines within the next two years, according to agreement with the city.

Va., Norfolk.—The Virginia Railway & Power Co. is reported working on plans for an extension of the Moran Ave. line. E. C. Hathaway is general manager at Norfolk, Va.

MACHINERY, PROPOSALS AND SUPPLIES WANTED

Manufacturers and others in need of machinery or supplies of any kind are requested to consult our advertising columns, and if they cannot find just what they wish, if they will send us particulars as to the kind of machinery or supplies needed we will make their wants known free of cost, and in this way secure the attention of manufacturers and dealers throughout the country. The Manufacturers Record has received during the week the following particulars as to machinery and supplies wanted.

Agricultural implements, etc.—Herman Dullere, hardware merchant, Seventhem, Belgium, wants to correspond with manufacturers of tools and equipment for agricultural work and other trades; has view to agencies.

Angle Iron Black.—See "Punch and Shear, etc."

Automobile Cleaning Machinery.—R. H. Nesbitt Auto Co., Spartanburg, S. C., wants apparatus for cleaning caked oil and dirt from automobile engine, axle housings, wheels, etc.; gasoline to be under air pressure and spray, loosening dirt and blowing it off engine.

Boiler.—D. R. Newman, R. F. D. No. 1, Blackstone, Va., wants 40 to 50-horse-power boiler; locomotive type or portable.

Boilers.—T. M. Hines, care Rocky Mount Ice & Fuel Co., Rocky Mount, N. C., wants prices on two 200-horse-power and two 150-horse-power boilers to carry 125 pounds of steam.

Bolts and Locks.—D. B. Evans, 606 Keystone Bank Bldg., Pittsburgh, Pa., wants addresses of manufacturers of locks; wants to place contract for making of several thousand small bolts with spring catches.

Brick Machinery.—F. L. Brown, Fairhope, Ala., will need disintegrator, pug mill and complete outfit for handling clay and finished product.

Bridges.—See "Road Construction, etc."

Bottle Washers, etc.—Southern Supply & Agency Co., 1701 Ave. A, Birmingham, Ala., wants prices on bottle washers and gas water boiler.

Bridge Approaches.—Jesse Newton, supervisor Rappahannock District, King George, Va., will receive bids until noon February 1 for building approaches to bridge on public road at "Lamb Creek;" approaches to extend back 150 feet on each side and be 18 feet wide at top.

Bridge Construction.—Greenville County Commissioners, Greenville, S. C., will receive bids until noon January 29 for construction of Burna bridge over North Saluda

River, three miles from Riverview, and until noon January 30 for building of Earle's bridge at Gowansville; lumber for latter furnished on site by county; certified check \$100; plans and specifications made known on day of letting; J. P. Goodwin, County Supervisor.

Broom Machinery, etc.—L. J. Cobb, Center, Ala., wants addresses of makers of and dealers in broom machinery and supplies.

Broom Machinery, etc.—J. B. Swords Supply Co., Swords, Ga., wants information on manufacture of brooms from broom corn and prices on machinery.

Building Hardware Manufactures.—See "Bolts and Locks."

Building Materials.—Addison V. Thurmond, 400 Grand Ave., Kansas City, Mo., wants bids on mill work, oak mantels, concrete columns, brick, cut stone, tile for bathrooms, marble steps, etc.

Building Materials.—See "Railroad Construction Supplies, etc."

Building Materials.—Mackie-Crawford Construction Co., 221 Grant Bldg., Atlanta, Ga., will receive sub-bids on structural steel, plumbing, electric wiring, mill work, sheet metal and roofing, lumber, cement, lime, etc.

Building Materials.—R. H. Richardson & Son, Seaboard Bank Bldg., Norfolk, Va., want store fronts, sash and doors and stone work for C. T. Parrish building at Norfolk; also want sash, doors and blinds, lumber, stone and tile roofing for N. B. Joyner building at Norfolk.

Building Material.—W. N. Hartgrove, chairman of building committee for Ancient Free and Accepted Masons, Garners, Fla., will receive bids until February 1 for material for Masonic temple at Camp Walton, Fla.; certified check for \$50; plans and specifications at office of W. C. Fredericks, architect, 414 Thiesen Bldg., Pensacola, Fla.

Building Materials.—A. J. Boots, 15 Lee Bldg., Memphis, Tenn., wants prices on wire lath, metal shingles and plumbing goods.

Building Materials, etc.—B. S. Robert-

son, Rocky Mount, Va., wants prices on building materials, electrical equipment and plumbers' supplies for hotel to contain 30 rooms and 12 baths.

Cable.—Office of Chief Signal Officer, Capt. R. J. Burt, disbursing officer, War Department, Washington, D. C., will receive bids until February 11 for furnishing 30 miles of cable, single conductor, intermediate, type 44, in accordance with specifications 419-B, 96-B, drawing 106; 150 miles single conductor cable, deep sea, type 45, in accordance with specifications 430-A, 96-B, drawings 106; to be coiled in closed freight cars; full-gilt bond in full amount of contract price required.

Canning Machinery.—H. H. Caution, care Bank of Fort Motte, Fort Motte, S. C., wants prices on equipment for cannery.

Canning Machinery and Supplies.—Farmers' Co-operative Canning & Transportation Co., Josephine, Ala., wants prices on canning machinery; also prices and samples of small size packers' cans for oysters' fish, vegetables, fruits, etc.

Canning Supplies, etc.—O. Monts & Bro., Laplace, La., want to correspond with manufacturers or to dealers in supplies for canning factory and manufacturing sugar-cane syrup.

Canning Equipment.—James Mumford, Palmetto, Fla., wants information and prices on cannery equipment for tomatoes and other vegetables.

Capstans.—Bids will be received at Bureau of Yards and Docks, Navy Department, Washington, D. C., until 11 A. M. January 27 for two electrically-driven capstans for Navy-yard, Norfolk, Va.; specifications can be obtained on application to Bureau or to commandant of navy-yard; R. C. Hollyday, chief of bureau.

Cars.—William Walker Jones, 511 Tucker Bldg., Raleigh, N. C., wants dealers' prices on two standard-gauge straight passenger coaches; also standard-gauge partition coach for negroes. State how soon can ship.

Churn-making Equipment.—Cochran Manufacturing Co., F. M. Arnett, manager, Hundred, W. Va., will want prices on machinery to manufacture churns, including engine, press, blowers, rumber, etc.

Clips.—Augusta Mattress & Manufacturing Co., 322 Jackson St., Augusta, Ga., wants prices on clips with prongs, such as used for clipping or assembling coil-spring beds; wants to correspond with manufacturers.

Cedar and Walnut Logs.—Chas. R. Fife, 729 Central National Bank Bldg., St. Louis, Mo., wants red cedar logs; also walnut logs 14 inches and up in diameter, 8 feet and more in length.

Coffin Machinery and Supplies, etc.—J. A. Harrison, Newport, N. C., wants estimates on equipment for small coffin and casket factory; also information on power to operate; sawmill not wanted; may want handles and other fittings.

Copper Wire.—See "Electrical Machinery, etc."

Cornice Brake.—Noble Machine Co., Fort Wayne, Ind., wants good second-hand 10-foot cornice brake.

Cotton Machinery.—J. D. Kennedy, Nashville, Tenn., wants good second-hand two-cylinder slasher, with cylinders; 54-inch face and 7 and 5 feet diameter.

Courthouse Furniture.—Daplin County Commissioners, Kenansville, N. C., will receive bids January 24 for courthouse furniture.

Courthouse Furniture.—Edgecombe County Commissioners, Tarboro, N. C., will receive bids January 25 on furniture for courthouse.

Creamery Machinery.—Greene County Dairymen's Association, R. J. Austin, manager, Greensboro, Ga., wants bids on butter-making machinery.

Crusher.—Edward P. Caldwell, Columbia, Tenn., wants rock crusher.

Crusher.—Thomas Egan, 4330 Canal St., New Orleans, La., wants crusher to crush rock asphalt to nut size; also mill to pulverize crushed asphalt.

Crusher.—H. G. Brown, P. O. Drawer 14, Beaumont, Tex., wants address of manufacturer of certain crusher or grinder of following description: Machine has three V-shaped cones; each cone (or V) separate, fits over large iron cylinder, is corrugated and has diameter of 24 inches; two cylinders, running inward; machine marked "N. U. M. Co." Mr. Brown wants new sections for machine.

Dam Construction.—J. B. Winslett, City Secretary, Dallas, Tex., will receive bids until 2 P. M. January 22 for construction of reinforced concrete dam on Elm Fork of Trinity River, about 30 miles northwest of Dallas; plans and specifications on file with City Secretary; certified check \$1000.

Dock Construction.—See "Road Construction, etc."

Drainage Equipment.—See "Stump-pulling and Ditching Machinery."

Drainage.—Board of Commissioners, Matagorda County Drainage District, No. 3, Matagorda county, Texas, will receive bids February 15 at courthouse, Bay City, Tex., for construction set out in report of engineer; plans on file with County Clerk; copies of plans and profiles furnished by G. G. Lovering, Palacios, Tex., engineer in charge; certified check to amount of 5 per cent. of amount of contract price, \$27,950; J. A. Harrison, chairman of board.

Drying Machinery.—See "Kaolin Machinery."

Electrical Equipment.—Lincoln Electric Co., W. C. Cain, president, Lincoln, Mo., will want prices on poles, Mazda lamps, copper wire and house fixtures.

Electrical Equipment.—See "Building Materials, etc."

Electrical Machinery.—See "Motors."

Electrical Machinery.—T. M. Hines, care Rocky Mount Ice & Fuel Co., Rocky Mount, N. C., wants prices on 25-kilowatt dynamos.

Electrical Machinery.—L. S. Schwartz Sheet Metal Works, 215 Crawford St., Houston, Tex., wants 5 to 30-horse-power alternating-current three-phase motor; complete with box, etc.; new or second-hand.

Electrical Machinery, etc.—Rogersville Electric Co., W. D. Harmon, president, Rogersville, Tenn., wants prices on generator, copper wire and motors.

Electrical Machinery.—W. M. Kennedy, 8 Weakley Ave., Memphis, Tenn., wants to rent or buy dynamo.

Engine.—See "Churn-making Equipment."

Engine.—W. M. Kennedy, 8 Weakley Ave., Memphis, Tenn., wants to rent or buy small gasoline or steam engine.

Engineering (City) Supplies.—Baltimore (Md.) Board of Awards will receive bids at office of City Register, City Hall, until 11 A. M. January 24 for furnishing lumber, sand, vitrified sewer pipe, asphalt blocks, curbstone, gutterstone and flagstone, sidewalk and sewer brick, etc.; bids for each class of material to be enclosed in separate envelope; specifications and proposal sheets can be had from H. K. McCay, City Engineer, on application.

Excavation.—Walton-McDowell Company, Brentwood, Tenn., may sublet portion of steam-shovel work on contract for 19½ miles heavy work on Lewisburg & Northern Railroad; work consists of about 1,000,000 yards excavation and 10,000 yards masonry.

Fire-brick.—Chas. R. Fife, 729 Central National Bank Bldg., St. Louis, Mo., wants fire-brick, broken and whole.

Fuel.—D. B. Evans, 506 Keystone Bank Bldg., Pittsburgh, Pa., wants readily-combustible fuel; to give greatest possible heat; more heat than ordinary fuel carbon; must burn like charcoal and be free from odor, smoke and flame; will contract for ton quantities.

Gas Boilers.—See "Bottle Washers, etc."

Gas Generator.—H. M. De Montmolin, Palatka, Fla., wants prices on gas generating outfit for 350-light plant, using regular gas fixtures; wants to generate gas from gasoline, naphtha or kerosene.

Gasoline Motors.—Lipps Coal Co., C. P. Addington, president, Wise, Va., wants prices and literature on gasoline motors for mines.

Glass Front.—Collins Bros. Company, Drayton and Congress Sts., Savannah, Ga., wants prices on plate-glass front for five-story hotel building.

Grinding Machinery.—See "Crusher."

Grinding Machinery.—See "Sawdust Machinery."

Hardware.—See "Agricultural Implements, etc."

Heating Plant.—Mackie-Crawford Construction Co., 221 Grant Bldg., Atlanta, Ga., will receive sub-bids on heating plant for \$68,000 hotel at Atlanta.

Heating Plant.—First Presbyterian Church, Hot Springs, Ark., wants prices on heating plant.

Hotel Furniture.—B. S. Robertson, Rocky Mount, Va., wants prices on furniture for hotel containing 30 rooms and 12 baths.

Ice-cutting Machinery.—Lancaster Ice & Coal Co., Lancaster, S. C., wants information and prices on machinery to cut 300-pound ice blocks into blocks weighing 10 pounds and more.

Ice-cream Machinery.—Greene County

Dairymen's Association, R. J. Austin, manager, Greensboro, Ga., wants bids on ice-cream machinery.

Ice Machinery.—Greene County Dairymen's Association, R. J. Austin, manager, Greensboro, Ga., wants bids on 10-ton ice plant.

Insulation.—Sturgis Ice Co., Walter J. Kern, proprietor, Sturgis, Ky., wants prices on insulation for 12-ton ice plant.

Iron.—L. S. Schwartz Sheet Metal Works, 215 Crawford St., Houston, Tex., wants prices on ¾ to 1½-inch bar iron; carload and less. (See "Punch and Shear, etc.")

Iron, Steel Pipe, etc.—Proposals received at office of General Purchasing Officer, Isthmian Canal Commission, Washington, D. C., until 10.30 A. M. January 28, and then opened, for furnishing wrought iron, steel pipe, pipe fittings, stovepipe, brass tubing, copper ferrules, valves, hose couplings, hose nozzles, grease cups, horseshoes, steel or iron wire, files, wrench parts, tacks, carriage bolts, cross-arm braces, cross-arms and pins, insulators, packing, gaskets, sheeting, cheese cloth, sash cord, wool waste, scythes, corn brooms, fire-brick, steel tapes, pitch, putty, turpentine and Japan drier. Blanks and general information relating to this circular (674) may be obtained from this office or the offices of the assistant purchasing agents, 24 State St., New York city; and 614 Whitney Central Bldg., New Orleans; also from the United States Engineer offices in the following cities: Baltimore, Philadelphia, Pittsburgh, Boston, Buffalo, Cleveland, Cincinnati, Chicago, St. Louis, Detroit, Milwaukee, St. Paul, Chattanooga, Louisville, Mobile and Galveston; Commercial Club, Kansas City; and Chamber of Commerce, Quincy. F. C. Boggs, Major, Corps of Engineers, U. S. A., General Purchasing Officer.

Kaolin Machinery.—C. R. Fife, Box 950, St. Louis, Mo., wants washing and drying machinery for treating high-grade kaolin. Send catalogues, prices, etc.

Lathe.—Bowles Motor Sales Co., 1608 14th St. N. W., Washington, D. C., wants good lathe.

Laundry Machinery, etc.—W. Beatson, Tryon, N. C., wants to correspond with manufacturers of steam laundry machinery and supplies.

Lifting Trusses, etc.—Proposals received at office of General Purchasing Officer, Isthmian Canal Commission, Washington, D. C., until 10.30 A. M. February 15, and then opened, for furnishing necessary lifting trusses, lifting mechanism, electrical equipment, signals, etc., for complete construction and erection of single track, single leaf bascule, same to be installed by commission on 103½-foot steel girders now on hand at bridge 140, relocated line, Panama Railroad. Blanks and general information relating to this circular (No. 675) may be obtained from this office or the offices of the assistant purchasing agents, 24 State St., New York city; 614 Whitney Central Bldg., New Orleans, and 1086 North Point St., San Francisco; also from the U. S. Engineer offices in the following cities: Seattle, Los Angeles, Baltimore, Philadelphia, Pittsburgh, Boston, Buffalo, Cleveland, Cincinnati, Chicago, St. Louis, Detroit, Milwaukee, St. Paul, Chattanooga, Louisville, Mobile and Galveston; Commercial Club, Kansas City; Chamber of Commerce, Quincy. F. C. Boggs, Major, Corps of Engineers, U. S. A., General Purchasing Officer.

Locomotives.—William Walker Jones, 511 Tucker Bldg., Raleigh, N. C., wants dealers' prices on second-hand Mogul-type locomotive, with specifications; standard gauge; 48 to 50 tons; good condition. State how soon can ship.

Lumber.—See "Cedar and Walnut Logs."

Lumber Wagons.—See "Wagons."

Lumber, etc.—Proposals received at office of General Purchasing Officer, Isthmian Canal Commission, Washington, D. C., until February 7 for furnishing lumber, monkey wrenches, nails, nuts, pig lead, manila rope, gasoline and sal soda. Blanks and general information relating to this circular (673) may be obtained from this office or offices of assistant purchasing agents, 24 State St., New York; 614 Whitney Central Bldg., New Orleans, and 1086 North Point St., San Francisco; also from United States Engineer offices in Seattle, Los Angeles, Baltimore, Philadelphia, Pittsburgh, Boston, Buffalo, Cleveland, Cincinnati, Chicago, St. Louis, Detroit, Milwaukee, St. Paul, Chattanooga, Louisville, Mobile and Galveston; Commercial Club, Kansas City; Chamber of Commerce, Quincy, and Commercial Club, Tacoma. F. C. Boggs, Major, Corps of Engineers, U. S. A., General Purchasing Officer.

Machine-shop Equipment.—See "Railroad Construction Supplies, etc."

Marble.—B. G. Stegman, Brownsville, Tex., wants prices on 20,000 pounds of white and colored marble cubes, one-half, one-quarter and one-eighth inch, for terrazzo floors.

Mattress Machinery.—See "Clips."

Metal Shingles.—James J. Molloy, 307 Juanita Bldg., Dallas, Tex., wants estimates on and placing of Cortright metal shingles, 10x14 inches, on union passenger station at Bella, Tex.; building 100x100 feet.

Mill Supplies.—See "Woodworking Machinery, etc."

Milling Machinery (Chemicals), etc.—W. M. Kennedy, 8 Weakley Ave., Memphis, Tenn., wants prices on milling and cooking machinery for chemicals.

Mining Machinery.—Panama Coal Co., O. W. Rash, president, Henderson, Ky., may need two mining machines within few weeks; also new pan.

Motor.—Bowles Motor Sales Co., 1608 14th St. N. W., Washington, D. C., wants prices on motor of one horse-power.

Motor Cycles.—See "Velocipede."

Naval Supplies.—Proposals received at Bureau of Supplies and Accounts, Navy Department, Washington, D. C., until 10 A. M. January 30, and opened immediately thereafter, to furnish at Navy-yard, Washington, D. C., etc., a quantity of naval supplies as follows: Schedule 4255, pneumatic hammers, high-speed twist drills, steel isolating rope, hydraulic leather, brass globe valves, Virginia pine culs, red brick, frog guard rails; schedule 4256, nickel bar steel, structural steel plates and angles. Applications for proposals should designate schedules desired by number. Blank proposals furnished upon application to bureau. T. J. Cowle, Paymaster-General, U. S. N.

Naval Supplies.—Navy Department, Bureau of Supplies and Accounts, Washington, D. C., receives bids until February 6 to furnish 2400 feet square felt, schedule 4282; 5400 feet of steel wire hoisting rope, schedule 4276; 10,000 feet white ash, 1500 feet cedar boat boards, schedule 4275; 89,000 pounds of medium angle steel, 170,000 pounds of medium plate steel, schedule 4281; 80,000 pounds of zinc boiler plates, schedule 4281; 5500 pounds of lump rosin, 1500 gallons damar varnish, 600 gallons interior varnish, 1500 gallons of spar varnish, schedule 4274; 1900 pounds of copper tubing, schedule 4281; 156 composition angle valves and 102 composition gate valves, schedule 4280; delivery Navy-yard, Norfolk, Va.; also until February 6 for furnishing miscellaneous lot of files, 1000 pounds of glycerine, schedule 4271; 55,000 pounds of forged or hot-rolled steel and 355,000 pounds of nickel steel, schedule 4270; delivery Navy-yard, Washington, D. C.; for schedules apply navy pay office nearest navy-yard.

Oil-development Machinery.—New Mid-Continent Oil Co., care Vaughan-Hill, Davis, Okla., wants gas and oil pipe lines, casings, drill machinery parts, cable and other material.

Paving.—C. A. Hodges, City Attorney, Nacogdoches, Tex., wants information on materials and approximate cost per square yard for paving small town.

Paving.—H. Kent McCay, chief engineer Paving Commission, City Hall, Baltimore, Md., will advertise following street paving about January 17: Contract No. 6, about 58,000 square yards sheet asphalt resurfacing; contract No. 7, about 42,000 square yards sheet asphalt resurfacing; No. 8, about 48,000 square yards sheet asphalt resurfacing, and sheet asphalt on 6-inch concrete base; No. 9, 8000 square yards vitrified brick paving on concrete base; No. 10, 18,000 square yards vitrified brick paving; No. 11, 5000 square yards granite block paving; No. 12, 6500 square yards granite block paving; No. 13, 8500 square yards granite block paving; prospective bidders may obtain plans and specifications by forwarding check for \$5 to City Engineer with request for prompt forwarding of plans, etc.

Paving, etc.—Sealed proposals addressed to Mayor and General Council, Atlanta, Ga., endorsed by name of bidder and character of work, received at City Clerk's office until 3 P. M. February 5 for following work and material for street and sewer departments for 1912: Furnishing and setting granite curbing; furnishing and setting concrete curbing; furnishing and laying tile sidewalks; furnishing and laying sheet cement sidewalks; furnishing and laying brick sidewalks; constructing sewers (western section); furnishing vitrified sewer pipe; furnishing castings for sewer work; furnishing cement for sewer work; furnishing chert or gravel; furnishing brick for repair work; furnishing cement tile for repairs; furnishing and laying tile sidewalks and cement drives for repair work; furnishing stone and crushed stone for macadam; furnishing

sand; furnishing cement for street department; specifications furnished upon application to R. M. Clayton, chief of construction.

Paving.—Proposals received by Board of Public Works, R. A. Denny, chairman, Rome, Ga., until noon February 14 for grading, curbing and paving certain streets with either wood blocks, vitrified brick, Massam compressed concrete, asphalt-macadam, sheet asphalt or bitulithic material; work will embrace furnishing and setting about 6500 linear feet of curb, foundations and surfacing 17,000 square yards of pavement. Specifications may be obtained from and plans and profiles seen at office of supervising engineer at Rome, and general information from board; W. M. Wilson, supervising engineer.

Paving.—City of Waycross, Ga., will open bids February 1 to construct sidewalks; cost \$45,000; H. D. Reed, Mayor; H. M. Pafford, engineer in charge.

Pipe.—City of Black Mountain, N. C., L. W. Morgan, Mayor, wants prices on six-inch pipe and sewer pipe.

Pipe.—City Council, Bay Minette, Ala., will meet February 5 to consider bids on 1200 feet of 24-inch salt-glazed pipe f. o. b. cars Bay Minette; usual rights reserved; W. D. Stapleton, Mayor.

Piping.—See "Oil-development Machinery."

Pump.—Geo. J. Adams, 39 South St., Cor. Old Slip, New York, wants 16 or 18-inch centrifugal pump.

Plumbing.—See "Building Materials, etc."

Pulverizing Machinery.—See "Crusher."

Punch and Shear, etc.—L. S. Schwartz Sheet Metal Works, 215 Crawford St., Houston, Tex., wants new or second-hand belt-driven shear to cut flats and angle iron 1, 1½ and 1½-inch; belt-driven punch to punch 1, 1½ and 1½-inch angle iron close to corner; prices on 1, 1½ and 1½-inch angle iron black; also prices on bar iron ¾ to 1½ inches wide, carload and less.

Pump.—Office Commissioners District of Columbia, Washington, D. C. Bids will be received until 2 P. M. January 22 for furnishing f. o. b. Washington, horizontal electrically-driven centrifugal pump for use on Plaza, Union Station; specifications and proposal forms may be obtained from Purchasing Officer, D. C.

Pumps.—T. M. Hines, care Rocky Mount Ice & Fuel Co., Rocky Mount, N. C., wants prices on belt-driven triplex pump, 8x8 or 8x10, water at 90; also belt-driven boiler-feed pump 3x6 or 4x6, brass fitted for 150 pounds working pressure.

Rail.—Frank L. Brown, Fairhope, Ala., will need about one-quarter mile of light steel rail.

Railroad Construction Supplies, etc. Atlantic, Okeechobee & Gulf Railway Co., T. P. Bell, secretary, Box 712, Tampa, Fla., wants quotations on all classes of machinery and equipment for roundhouse and car repair shops; also catalogues and price-lists on all material and supplies for track, buildings and bridges.

Rails, etc.—See "Track Supplies."

Refrigerators.—Addison V. Thurmond, 400 Grand Ave., Kansas City, Mo., wants bids on refrigerators for apartment building.

Road Construction.—Talladega County Commissioners, Talladega, Ala., will receive bids until noon February 15 for grading, draining and surfacing with gravel about 4½ miles of Talladega and Mardisville Rd.; certified check \$400; W. S. Keller, State Highway Engineer, Montgomery, Ala.

Road Construction.—John V. Huntress, County Auditor, San Antonio, Tex., will receive bids until 11 A. M. January 20 for retopping Austin Rd. from Salado Creek to 12-mile post; grading W. W. White Rd. from Austin to Stahl Rd.; retopping Corpus Christi Rd. from Harlandale to 10½-mile post; grading and graveling Garraty Rd. from Austin Rd. to New Braunfels Ave., and for other supplies for Bexar county; plans and specifications on file in County Auditor's office; John V. Huntress, County Auditor.

Road Construction.—Good Roads Commission, E. E. Hunter, chairman, Elizabethton, Tenn., receives bids until noon February 1 for grading 11 miles of road (four miles having been graded) from Washington county line to Sullivan county line via Elizabethton; road is portion of Memphis-to-Bristol highway; will also receive bids for macadam or rock work on about 13½ miles of said road; specifications furnished by Charles P. Toncray, engineer, Elizabethton.

Road Construction, etc.—County Commissioners will receive bids at courthouse, Fort Pierce, Fla., February 7 for construction of 60 miles of hard-surface roads, bridges and docks; bond issue \$300,000; usual rights reserved; plans, profiles, etc., may be seen

at clerk's office, or at office of D. D. and C. M. Rogers, engineers, Fort Pierce and Daytona, Fla.

Road Construction.—F. L. Portlock, road engineer, 242 Monticello Arcade, Norfolk, Va., will receive bids until noon January 20 for repairing clay road bed on Virginia Ave., 3d, 4th and Lake Sts. at Wiloughby Beach, Va., and for extending clay roadbed on Virginia Ave. to 15th St.; bids received at same time for building roadbed of crushed stone six inches deep and nine feet wide, using clay for sides of road. For further information address Mr. Portlock.

Road-surfacing Material.—Mobile County Board of Revenue, Mobile, Ala., invites bids for about 200,000 tons road-surfacing material, including chert, gravel, rock and oyster shells; bidders to give description of material, where located and price delivered f. o. b. cars Mobile; E. L. Strange, County Engineer.

Saw Table.—I. T. Worthley, care Pennsylvania Department of Forestry, State Forest Academy, Mount Alto, Pa., wants prices on saw table for cutting logs of not over 4 feet long and 14 inches diameter into blocks of various sizes and shapes.

Sawdust Machinery.—D. E. Dexter, Orange, Mass., wants machine to make salable sawdust from waste wood, blocks and refuse of box-making and other woodworking shops.

Seating.—City Council, Bay Minette, Ala., will meet February 19 to consider bids (f. o. b. cars Bay Minette) on 325 chairs suitable for school or chapel; usual rights reserved; W. D. Stapleton, Mayor.

Seating.—Edgecombe County Commissioners, Tarboro, N. C., will receive bids January 25 on seating for courthouse.

Seating.—Duplin County Commissioners, Kenansville, N. C., will receive bids January 24 on seating for courthouse.

Sewer Construction.—See "Paving, etc."

Sewer Supplies.—Baltimore (Md.) Board of Awards will receive bids until 11 A. M. January 24 for furnishing and delivering nozzles, deflectors and special castings for sprinkling filters at sewage-disposal works; specifications can be obtained on application at office of Sewerage Commission, 904 American Bldg.; certified check \$300; approximate quantities, 1200 nozzles and deflectors, 1200 special castings; Charles England, chairman Sewerage Commission.

Silver-plating Plant.—E. P. McGhee, Rome, Ga., wants to correspond with manufacturers of silver-plating plants.

Soap Machinery.—M. B. Kendrick Company, 15 Bradford Bldg., Covington, Ky., will want soap machinery.

Soap Machinery.—W. M. Kennedy, 8 Weakley Ave., Memphis, Tenn., wants prices on machinery to make, press and stamp soap.

Stoves.—Addison V. Thurmond, 400 Grand Ave., Kansas City, Mo., wants bids on stoves for building of six apartments.

Steam Condensers.—Fayetteville Ice & Manufacturing Co., P. O. Drawer 426, Fayetteville, N. C., wants new or second-hand steam condensers for 60-ton plant; state lowest price.

Steam Shovel.—Frank L. Brown, Fairhope, Ala., will need steam shovel.

Structural Steel.—See "Building Materials."

Stump-pulling and Ditching Machinery.—Capt. Chas. S. Wyly, C. E., Brunswick, Ga., wants information, catalogues and prices on stump-pulling and ditching machinery for land-clearing and drainage development.

Syrup Supplies.—See "Canning Supplies, etc."

Tools.—Herman Dullere, hardware merchant, Saventhem, Belgium, wants prices on tools; view to agency. (See "Agricultural Implements, etc.")

Track Supplies.—J. F. Tillery Iron Co., Dale Ave., Knoxville, Tenn., wants all kinds of track supplies; wants catalogues and quotations from manufacturers.

Vacuum Cleaners.—Addison V. Thurmond, 400 Grand Ave., Kansas City, Mo., wants bids on vacuum cleaners.

Velocipede.—Continental Coal Corporation, W. L. Moss, general superintendent, Wallsend, Ky., wants motor velocipede for railroad service.

Wagons.—E. E. Wollett, Littleton, N. C., wants new or second-hand wagons of about 10 tons capacity for lumber hauling with traction engine.

Washing Machinery.—See "Kaolin Machinery."

Water Meters.—Board of Water Commissioners, Charlotte, N. C., will receive bids

February 1 for 100 or more five-eighths-inch water meters; usual rights reserved.

Water-works.—W. V. Brown, City Clerk, Dustin, Okla., receives bids until 7 P. M. January 22 for constructing water-works; plans and specifications on file with Mr. Brown or from E. W. Gantt, Fort Smith, Ark., upon payment of \$5.

Well-drilling Machinery.—See "Oil-development Machinery."

Woodworking Machinery.—See "Churn-making Equipment."

Woodworking Machinery.—See "Saw Table."

Woodworking Machinery, etc.—Jon. L. Pearson & Son, R. 2, Keysville, Va., wants new or second-hand (if in good condition) 32 to 26-inch band saw; 16 to 20-inch wood lathe; 6 to 8-inch four-side molder; also mill supplies of various kinds.

Woodworking Machinery.—See "Coffin Machinery and Supplies, etc."

Woodworking Machinery.—See "Cornice Brake."

Woolen-blanket Machinery.—C. R. Merritt, Mt. Airy, N. C., wants data and prices on woolen-blanket machinery.

INDUSTRIAL NEWS OF INTEREST

A. J. Cesery Co.'s \$45,000 Contract.

The contract for plain and ornamental plaster work for the Cohen Building, Jacksonville, Fla., has been awarded to the A. J. Cesery Company of Jacksonville for approximately \$45,000.

Wants a Mill Supply Man.

A capable man is wanted to take charge of the mill supply department that will be opened up by an electrical jobbing house as stated in our Classified Opportunities columns. A man acquainted with the Southern and Western trade and their requirements is preferred.

Inquiries for Concrete Ties.

The Universal Concrete Tie Co. of New Orleans states that it has inquiries from Japan and Russia for details and advices on the cost of its Percival concrete tie and rail fasteners. This company manufactures the metal parts for its patented reinforced concrete ties and screw-spiking device. M. W. Carroco is manager.

Opportunity for Machine Shop.

Managers of machine shops will be interested in the following inquiry from the Emerson Engine Co. of Alexandria, Va. Victor L. Emerson, the company's president, writes as follows: "Correspondence desired with a machine shop capable of manufacturing a specialty at a specified cost for cash under contract; moderate weight machine tools required. An excellent opportunity for a manufacturer having the proper equipment who could produce good work at a good price."

New Partners with Stone & Webster.

The industrial and transportation developments which are constantly being made in the South and Southwest, and in which Stone & Webster of Boston are extensively interested, together with their other great interests, constantly increases the business which it is obliged to handle. Two new partners, Dwight P. Robinson and John W. Hallowell, were taken into the firm from December 30, 1911. Other members of the firm are Charles A. Stone, Edward S. Webster, Russell Robb, Henry G. Bradlee and Eliot Wadsworth.

The Youngblood Laboratory.

An important feature in the development of the mineral resources of the South has been found in the facilities for carrying on chemical analyses and the proximity of new developments to physical and chemical laboratories. Among these is the Youngblood Laboratory, recently established by P. D. Youngblood, in the Board of Trade Building, Savannah, which contains a complete laboratory equipment. Mr. Youngblood is prepared to make thorough and accurate physical and chemical analyses of samples sent to his laboratory. He has had 18 years' experience in laboratory work.

Cincinnati Iron & Steel Co.'s Sales.

The Cincinnati Iron & Steel Co., Cincinnati, has during 1911 added a new customer to its list of regular customers for each day of the year. These were chiefly from the South, and were for iron and steel products, machine tools, including "Ciseco" lathes, punches and shears, operated by both power and hand; electric cranes, clutches, etc. Recently the company has taken the agency for the Colonial tool steel of all grades, including high-speed steel, of which it is stated that it carries the largest stock in the city of Cincinnati.

The Pittsburgh-Buffalo Co.'s Increasing Business.

The most extensive sales of its products experienced in the history of the company have been made by the Pittsburgh-Buffalo Co., Frick Bldg., Pittsburgh, in the past two months, the returns for the month of November, which are complete, showing an excess of 26 per cent. over that of the same month in 1910, which up to that time was

the banner month for sales. The company ascribes a large part of this success to the wide publicity given the quality of its coal, coke and brick products and to the assistance of its great number of friends made in the 35 years since "The Jones Interests" were founded.

Recent Sales of Security Cement.

The continued good business of the Security Cement & Lime Co., 800 Equitable Bldg., Baltimore, is indicated by important sales, among which are the following, recently made: To Herman Voigt, contractor, for cold-storage plant, Hagerstown, Md., 1000 barrels; P. Flannigan & Son, contractors, for use on Baltimore City contracts and for general purposes, 30,000 barrels; P. Redington & Sons, contractors, for general use, Baltimore City, 10,000 barrels; Wachter, Davis & Co., 1500 barrels; J. J. Walsh & Son, contractors for Standard Oil Company Bldg., Baltimore, 500 barrels, and Max B. Mueller, contractor for the Tobacco Warehouse, Baltimore, Md., 3000 barrels.

Bids Wanted for Extensive Material and Work on the Fulton County Courthouse, Atlanta, Ga.

Scaled proposals for the following four important items of construction in connection with the building of the Fulton county courthouse at Atlanta will be received by the Commissioners of Roads and Revenues, H. E. W. Palmer, chairman, as announced in detail in our "Proposal Advertising" columns. The particular items of material and work referred to are the exterior stone and setting of same; common brick work, face brick work, glazed brick or tile work and terra-cotta partitions and furring; exterior ornamental terra-cotta and setting of same; ordinary concrete work, area and basement concrete floors, granolithic finish and cinder concrete slabs. These proposals for work and material on this important building will be received until noon January 25, and in view of the limited time remaining and the importance of the work, dealers and contractors in these lines should submit their proposals immediately.

Lehigh Portland Cement Co.'s Innovation in Trade-Marks.

Realizing that in the human-interest element in trade-marks lies the secret of popularity in many lines of goods that hold leading positions on the market today, the Lehigh Portland Cement Co., Allentown, Pa., and People's Gas Bldg., Chicago, has adopted an innovation in the design of its cement product trade-mark. This design consists of a smiling little Chinaman with the name Lee on his cap and a bag of Lehigh Portland cement in his arms. The old trade-mark is kept partly in evidence by putting the Chinaman in a circle with a dark blue background and a red outer rim, the colors of the original label. In order to bring this new trade-mark out strongly the company is now reproducing it in every phase of its advertising and on the cover of "The Lehigh," the monthly publication of the company. This trade-mark, representing an interesting departure from the usual line of cement trade-marks, will now be much observed and will attract attention throughout the industry.

Louis E. Kaiser, Specialist in Time-Recording Devices.

Mr. Louis E. Kaiser, the Baltimore clock expert, was for many years with the firm of H. Bealmeier & Company, wholesale dealers in clocks. Since the retirement of this firm he has been the Southern representative and sales manager of the Newman Clock Co., the Nane Clock Co., the Cincinnati Time Recorder Co., and others. Making a specialty of watchmen's clocks and time recorders, he has at the same time devoted personal attention to the repair department and has built up an extensive business among corporations, manufacturers and others in Baltimore and vicinity. Recent purchasers

of watchmen's clock outfits from him are the United Railway & Electric Co. of Baltimore, the Virginia Railway & Power Co. of Richmond, the E. I. Du Pont de Nemours Powder Co. of Wilmington, Del.; the B. C. & A. Railway Co., the United Fruit Co., and the Merchants and Miners' Transportation Co. The latter has equipped every ship of its line with these clocks. Another feature of his business is the handling of approved fire extinguishers and appurtenances, including the "Accurate" extinguisher.

Mineral Land for Sale.

A tract of land in which 70 out of 100 acres contains valuable minerals is offered for sale in our advertising columns. The land contains long and short-fiber asbestos in small and large veins and pockets; also graphite in four forms—crystalline, flake or hard; earthy graphite and quartz graphite. The vein, four feet wide, assays 5 to 6 per cent. pure graphite. There is also a large talc vein and a large quantity of low-grade talc, and extensive deposits of kaolin and yellow ochre, corundum and nickel ore. The location is five miles west of Chipley, Ga.

The Murray Iron Works Co.'s Southern Representative.

In further extending its Southern business and taking care of that already developed the Murray Iron Works Co., Burlington, Ia., has transferred H. M. Jones from Des Moines, Ia., to new headquarters at Memphis. He is at all times ready to offer his services to anyone desiring data or information relative to steam-power plants, and anyone in the South who is interested in Murray Corliss engines or Murray boilers of any type will receive prompt attention on writing or conferring with him. He has had extensive experience, both practical and technical, so that his advice and ideas should be of value to those desiring to improve their old plants or to install new ones. His address is H. M. Jones, Gayoso Hotel, Memphis. This company manufactures Murray Corliss engines, fire tubular, water-tube and marine boilers, heavy castings, installs complete power plants and fabricates and erects steel-plate work.

Valuable Manufacturing Property for Lease in Atlanta.

A two-story office building and a plot of ground 150x249 feet, located in the business section of Atlanta, Ga., on Whitehall St. and Stewart Ave., formerly occupied by the Virginia Bridge & Iron Co., is offered for lease for a term of years. This company has moved to East Point, near Atlanta, and wishes to lease its city property to anyone desiring to locate in the downtown section of a large city. This property is only a few squares from the freight depots of all the principal railroads entering the city of Atlanta. The ground is level and fronts on the two streets named, and two sidetracks from the Southern Railway reach the property. Other important industries are located in the vicinity, the location being on one of the principal business streets of the city. As a convenient shipping point, and for many other reasons, this is one of the most desirable locations in the city of Atlanta. For information and terms address the Virginia Bridge & Iron Co., Atlanta, Ga.

Recent Sales by the George M. Newhall Engineering Co.

Among the recent important sales of railway equipment and other supplies handled by the George M. Newhall Engineering Co. of Philadelphia and 50 Church St., New York, are the following: To the Norfolk & Western Railroad, a 43-inch lifting magnet and a repeat order sale of a 12-ton locomotive crane; the Virginian Railway, a 25-ton industrial works locomotive crane, equipped with magnet generating set and bucket; the Southern Railway Co., two 100-ton self-propelling wrecking cranes, equipped with generating sets and lifting magnets; the Chesapeake & Ohio Railroad Co., a 10-ton pillar crane; the Atlantic Coast Line Railroad, a 12-ton locomotive crane and grab bucket; the Baltimore & Ohio Railroad Co., a fourth repeat order sale of a 120-ton wrecking crane and a one-cubic-yard grab bucket; the Armour Institute of Technology of Chicago, a Newhall double-effect evaporator for demounting and experimental work, and extensive sales to the Pennsylvania Railroad Co., the Lehigh Valley Railroad Co., Central Railroad of New Jersey, the Erie Railroad Co., the Ulster & Delaware Railroad, the Philadelphia & Reading Coal & Iron Co., and the Baritan Copper Works, Perth Amboy, N. J.

Engineering Work of Norman A. Hill

During the past six and a half years the contracting and consulting engineering work of Norman A. Hill, consulting engineer, 405

Courtland St., Baltimore, has included in actual contract cost for electric installations in Philadelphia and Baltimore over \$40,000; for installations of ventilating apparatus and power-plant equipment and civil engineering work, over \$100,000; for heating installations, over \$100,000; for miscellaneous engineering, including vacuum cleaning systems, refrigerating plants, sprinkler equipments, etc., over \$50,000; electric wiring for buildings in Baltimore and a few distant points for Malcolm W. Hill Company, contractors, over \$50,000. Steam and hot-water heating installations and other special and general engineering work in various parts of the country largely increase the above amounts in representing the total actual cost of work performed under his supervision. In addition to this, he has made plans and specifications for other work amounting to over \$150,000 in cost for work done under contract, but not under his supervision. The installations included in this work were made in many of the most important buildings and plants, including United States postoffices, theaters, factories, hospitals, school buildings, hotels, office buildings, residences, sewage pumping stations and disposal plants, quarters in army posts, etc.

Annual Convention of the H. M. Byllesby Affiliated Utility Companies.

The information that Thomas A. Edison was to be present at the annual convention of H. M. Byllesby & Co. of Chicago and affiliated utility companies attracted particular attention to the recent celebration of the tenth anniversary of that organization. As Mr. Edison seldom attends public gatherings, it was considered one of the greatest compliments that could be paid to the Byllesby organization. When Chairman T. K. Jackson of Mobile called the convention to order there were 255 delegates present, representing 40 groups of electric, gas and street-railway properties in 18 States of the West and South. The holding of this convention was designed to promote the already high efficiency and public satisfaction in the utilities managed by the Byllesby organization. Following an address of welcome by Mr. Byllesby, in which he summarized the remarkable growth of the organization and reiterated his belief that successful utilities operation must rest upon clean, liberal and progressive management, the delegates proceeded with a program of specially prepared papers, followed by discussions and addresses. This program was devoted largely to questions affecting points of contact with the public, quality of service, regulation by State commissions and efficiency and welfare of employees. The following subjects were presented in the papers read: "Staff Cooperation Toward Better Relations and Increased Efficiency of Employees," by W. R. Molinar, Oklahoma City, Okla.; "Points of Contact with the Public," by W. H. Hodge of Chicago; "Present-Day Jurisdiction of State and Municipal Bodies Over Public Service Corporations," by Isaac Milkewitch of Chicago; "Steam Heating Economics," by A. E. Stevens of Minot, N. D.; "Suburban Distribution of High-Pressure Gas," by H. H. Jones of San Diego, Cal.; "Ways and Means of Building up Business in Small Towns," by H. E. Morton of Albany, Ore.; "The Accountant in Public Service," by B. W. Lynch, Bluefield, W. Va.; "Our Appraisal Work During 1911," by Harold Almet of Chicago; address by Gen. Geo. H. Harries of Louisville, Ky.; illustrated lecture on "Engineering," by O. E. Osthoff of Chicago; illustrated lecture on "New Business Methods," by E. L. Callahan of Chicago; "The Attitude of the Manager Toward His New Business Department," by Alex. F. Douglas of Portland, Ore.; "The Byllesby Employees' Investment Clubs," by R. J. Graf of Chicago.

Southern Sales of Frick Company Refrigerating Machinery.

Continued good demand for ice-making machinery and refrigerating equipment in the South is indicated by the recent sales of the Frick Company, Waynesboro, Pa. Among its important sales recently made are the following: To the Texas Refining Co., Greenville, Tex., a 24-ton improved flooded freezing system and a 36-ton distilling system; Bowie Ice & Coal Co., Bowie, Tex., a 6-ton improved flooded freezing system; Tulsa Ice Co., Tulsa, Okla., a 25-ton freezing system; Mann Bros., Brady, Tex., a 15-ton ice-making plant, complete; W. H. McPhail, Laurens, S. C., a 15-ton ice-making plant, complete, for use in ice factory at Clinton, S. C.; East Atlanta Ice Co., Atlanta, Ga., ammonia compressors of 65 tons capacity and a 20-ton additional ice-making plant; The Texas Ice & Cold Storage Co., Dallas, a 20-ton refrigerating machine; Zimmerman Ice Co., Arlington, Md., a 30-ton ice-making plant with freezing and boiler

systems; Mansfield Ice Co., Mansfield, Ia., a new circulating device for freezing plant, steam condensers, etc.; Kennedy Bros., West Palm Beach, Fla., a 5-ton ice-making plant, complete, to be installed in their ice factory at Montague, Tenn.; John Hague, refrigerating engineer, St. Louis, a 3-ton refrigerating machine for the Cole Camp Creamery Co., Cole Camp, Mo., and a similar machine for Winfree & Gaeb, Nashville; J. M. Jenkins, Lumberton, Miss., a 12-ton improved flooded freezing system; a similar plant for the Alverson Ice & Power Co., St. James, Mo.; Standard Ice Co., Raleigh, N. C., a 25-ton ice-making plant, complete; L. K. Shepherd Ice-Cream Co., Richmond, Va., a 6-ton refrigerating machine, 20-ton improved flooded freezing system, with boiler, etc.; the Merchants' Cold-Storage & Commission Co., Charlotte, N. C., a 16-ton refrigerating machine, etc.; The Fairmont Ice Co., Fairmont, W. Va., a 30-ton ice-making plant, complete; The Riverside Ice Co., New Orleans, changing freezing tank to improved flooded freezing system; similar change in plant of C. H. Cash, Crescent City, Fla.; the Piedmont Company, Atlanta, ammonia condensers, freezing tank coils, and changing present freezing system to improved flooded freezing system for use in the Piedmont Hotel, Atlanta. Many other sales have at the same time been made by this company in the South and other parts of the United States, as well as extensive sales in Cuba.

TRADE LITERATURE.

Smith Woodworking Machinery.

The plant of H. B. Smith Machine Co., Smithville, N. J., and several of the wood-working machines manufactured by that company are illustrated in "The Mechanic" for January, published by the Smith company. It has made a specialty of sash, door and window-blind machinery for more than 60 years, and within the last 10 years has developed its line of machinery for use in furniture factories.

Dickson Car Wheel Co.'s 1912 Diary.

In accordance with its yearly custom, the Dickson Car Wheel Co. of Houston, Tex., is sending to patrons and friends a very handsome morocco-bound memorandum book, which contains, besides a diary, a number of pages of very interesting statistical information and maps of countries of the world. Some incidental information is given about the Dickson car-wheel plant, which is stated to be one of the most complete and up-to-date car-wheel establishments on the American continent.

American Ingot Iron Culverts in the South.

Views of American ingot iron culverts made by the Tennessee Metal Culvert Co., Nashville, are shown in the Highway Improvement News, published by that company. One view shows a gang of men laying 140 feet of 12-inch culvert in two sections under the Nashville Railway & Light Co.'s tracks at Nashville; another view shows a 12-inch culvert under a fill on the Nashville Terminals; another shows a river steamer loaded with American ingot tanks going up the Cumberland River. Other items of interest to culvert users in construction work is included.

Dennison's Catalogue for Printers.

A "partnership" which has been effective and profitable for many years, Dennison as manufacturer and the printer as distributor, has developed the tag and label business to one of substantial proportions. The well-known Dennison tag has been the means of introduction and has led to a participation by the printer in the development of the Dennison business, which now comprehends among its leading products store and office supplies, gummed paper, labels, glue, paste, mullage, paper fasteners, crepe paper, etc. Dennison's catalogue for printers recently issued by the Dennison Manufacturing Co., South Framingham, Mass., contains illustrations, descriptions and price-lists of these and many other products of the company.

Tungstoller Separable Lighting Fixtures.

The novel features embodied in T T C Tungstoller separable lighting fixtures are described and illustrated in the unique cut-leaf catalogue No. 119, in which 648 different assembled views of a two-arm fixture are made possible by merely rearranging and turning the cut sections on which the parts are pictured. These fixtures are manufactured and the catalogue issued by the Tungstoller Co. of Connecticut. O. Attention is called to the opportunities afforded to select and arrange various styles or types of fixture to suit the individual taste or the archi-

tectural requirements of any specific lighting installation. The catalogue will be sent on request made to the Tungstoller Co., or to the National Electric Lamp Association, Department of Publicity, Cleveland.

Calendars for 1912.

The 1912 calendars received since our issue of January 11 include a wall calendar from the Newman Machine Co., Greensboro, N. C., with illustrations of its plant and various woodworking machines manufactured by that company; the company is also sending out with this calendar a folder showing its new model No. 10 extra heavy molding machine with description of the same; also illustration of its No. 9 feed planer and matcher. A large descriptive catalogue is issued, which will be sent to interested persons on request. A wall calendar with large figures has been received from the National Ammonia Co. of St. Louis and Philadelphia, manufacturer of the "National" and "Peerless" brands of anhydrous and aqua ammonia. A list of the selling agents of this company, of which many are in the important cities of the South, is given on the last page of the calendar.

Ingersoll-Rand "Arc Valve" Tappet Rock Drills.

The positive quality of the valve movement of the "Arc Valve" tappet rock drills manufactured by the Ingersoll-Rand Company, 11 Broadway, New York, renders it particularly useful when steam is used and when water condensation is likely to be encountered. Bulletin 4204, issued by this company, shows sectional views of the drill and gives a list of duplicate parts, together with descriptive table of the sizes and capacities. The drill has an arc-shaped valve which is moved on a circular seat by a rocking tappet, the sliding surfaces all being concentric with the rocker pin. The working pressure is on the back of the valve, thus forcing it to its seat. The valve is moved by the piston through an intermediate tappet or rocker which swings on a pin and extends slightly into the cylinder bore, where it is moved by beveled shoulders on the piston sliding under it.

Norton Car Axle Grinding Machine.

Illustrations and a detail description of a grinding machine which has successfully demonstrated its value in finishing and repairing axles by a method which also prolongs the life of the axle and has other advantages are included in "Grits and Grinds," published by the Norton Company, Worcester, Mass. This is the Norton car axle grinding machine and is manufactured by that company. It may be used for grinding new axles, as well as for repairing old ones, and is designed for durability, simplicity and effectiveness. The manufacturer has embodied in this design suggestions resulting from 10 years' experience in removing metal by grinding. It is stated that the results already demonstrated through exhaustive tests and trials point to this machine as a big factor in future methods of finishing and repairing car axles. Several successful tests have been given in the presence of interested railway men.

"Economy" Renewable Cartridge Electric Fuses.

Pending the issue of an adequate treatise on the distinctive mechanical and electrical features of its Cartridge Enclosed Fuse, a catalogue has been published by the Economy Fuse & Manufacturing Co., Phipps' Power Building, Pittsburgh. The company is confident that a thorough trial of this economical electrical protection will result in complete installations. The fuses are the result of extensive laboratory experiments by experienced engineers and physicists, and the result is a device which is said to be the first to meet the requirements which it will withstand. It is made to the National Electric Code ratings, is a renewable cartridge fuse, and is designed and constructed to meet the specifications of the authorities whose rulings govern the use of such devices. Illustrations, descriptions, dimensions, capacities, ratings and prices are included in the catalogue. It will be sent on request from interested persons.

Barrett Specification Roofs.

An accurate representation of most of the important modern concrete buildings erected by the Turner Construction Co., 11 Broadway, New York, in the past nine years, showing them brought together in a scale drawing, has been incorporated in a large folder issued by the Barrett Manufacturing Co., 17 Battery Pl., New York. This makes an imposing display of the best types of modern concrete construction. In the use of concrete the Turner Construction Co. has followed the specifications which were drawn by a large number of architects and engi-

neers who have designed these buildings for the economy that results from adequate strength and no repairs. In 95 per cent. of the buildings shown in this illustration Barrett Specification Roofs have been specified. It is stated in the folder that the economy of Barrett Specification Roofs justifies their adoption not only on large concrete buildings as shown in the illustration in the folder, but on flat-roofed buildings of all

kinds, from a tenement to a skyscraper, from a small mill to a modern manufacturing plant costing millions. The Turner Construction Co. is one of the leading construction companies of New York, the partial list of buildings erected by them as shown in this collection alone amounting to over \$12,000,000. It has had the drawing lithographed suitable for framing, making a very interesting wall picture.

MOTOR TRUCK AND TRACTOR NEWS

New Automobile Company in Huntington, W. Va.

Its new quarters have been occupied by the West End Automobile Co. of Huntington, W. Va. This company handles automobiles and accessories and desires to add to its recently established lines a medium-priced touring car. Manufacturers of high-grade lubricants are also invited to correspond with the company with the view of representation.

Motor Trucks Becoming Numerous in Virginia.

A press report from Norfolk, Va., states that no business has shown more marked growth in that vicinity and adjacent territory than the automobile and motor truck industry. That section is alive with cars of different makes, the dealers are alert and the new models appear there as soon as anywhere else in the country. While the passenger touring car business is larger than the other lines, delivery wagons and motor trucks of various makes are becoming plentiful. It will not be many years before the horse will be largely superseded. Many thousands of dollars are invested in the business and some of the best men of the community are engaged in it.

G. M. C. Gasoline and Electric Trucks at the New York Show.

That there is a field for the gasoline truck and a separate field for the electric truck, in the opinion of the General Motors Truck Co., Detroit, with New York branch at 236 West 59th street, is indicated by the fact that this company has extensive exhibits of both gasoline and electric trucks in the New York motor truck show. The transportation of merchandise is evidently a subject too broad to be covered by any one type or design of motor trucks, too big even to be answered by any one motor power. Very frequently the need for both electric and gasoline motor power exists in the same business. The General Motors Truck Co., acting on this principle, produces lines of trucks to fit the individual needs in all cases.

Three-Ton Avery Truck Used as an Automatic Loading Machine.

Handling and hauling materials and machinery is one of the important elements in the work of engineers and contractors. Loading and unloading, hauling heavy pipe, machinery or materials of construction are often tasks that require much ingenuity and a considerable amount of power. The accom-

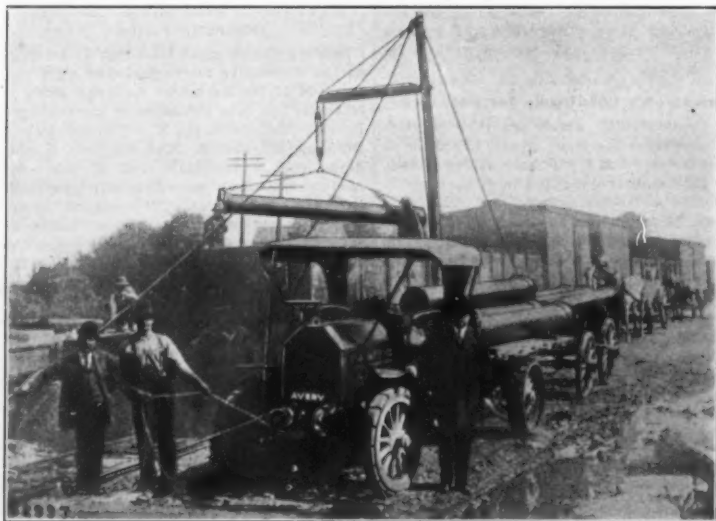
panying illustration shows how the Purchase Coal & Feed Co., hauling heavy iron sewer pipe for the city of Cincinnati, uses its three-ton Avery truck, manufactured by the Avery Company, Peoria, Ill., not only for hauling the pipe, but for loading and unloading it as well. The pipes weigh about 1400 pounds each, and are ungainly and hard to

"Alco" Motor Trucks in the South.

In the development of its motor truck trade in the South, the American Locomotive Co., automobile branch, 1886 Broadway, New York, is carrying on extensive demonstrations of the "Alco" motor truck in Richmond, Va. One of the 3½-ton trucks made a record haul recently when it transported a load of 4½ tons from the abattoir of W. S. Forbes & Company, several miles out on the Hermitage road, to the packing-house in Richmond in 28 minutes. Owing to the repairs on Hermitage road it has been closed to traffic, and the truck was required to take a roundabout course, which made the hauling very difficult for horse-drawn vehicles. The truck is reported to have passed 10 wagons stalled on the way, while it had no difficulty in negotiating the worst sections. The American Locomotive Co. is well known throughout the South as a manufacturer of locomotives which have been extensively used in that section for many years. As motor truck hauling is only a somewhat modified form of locomotive work, the reputation already gained by this company makes the introduction of the motor truck manufactured by it a simple matter of letting the business men know of its good qualities.

The "Packers" Motor Trucks.

The 2-ton and 4-ton "Packers" motor trucks, manufactured by the Packers Motor Truck Co., Wheeling, W. Va., are illustrated and described in detail in the catalogue recently issued by the company. These trucks are on exhibition at the motor truck show in New York, where they are attracting attention as a distinctly Southern product in motor truck manufacture. These trucks have been designed to fulfill the conditions required for motor trucks in and around Wheeling and Pittsburgh, which assures them of being applicable to practically all localities. Many demonstrations that have been given prove that the company has succeeded in turning out a truck which stands the severe strains of hilly country and poor roads. It has a well-equipped plant at Wheeling, W. Va., where skilled mechanics are employed and the best of materials used



EVERY THREE-TON MOTOR TRUCK DOING DOUBLE DUTY.

panying illustration shows how the Purchase Coal & Feed Co., hauling heavy iron sewer pipe for the city of Cincinnati, uses its three-ton Avery truck, manufactured by the Avery Company, Peoria, Ill., not only for hauling the pipe, but for loading and unloading it as well. The pipes weigh about 1400 pounds each, and are ungainly and hard to

in the construction of these motor trucks. The "Packers" truck is designed and built for strength, and it is stated that the experience of various users prove that it gives the purchaser the service that he expects. The plant is well equipped to make any type of body desired, heavily ironed and braced, securely bolted to the chassis, and

using only well-seasoned kiln-dried hardwood in construction. This catalogue will be sent to interested persons on request.

Clinton Improvements.

Mr. Paul H. Nash, resident engineer, Clinton, S. C., writes to the MANUFACTURERS RECORD:

"While many of the other towns of the South make strides toward the front, Clinton is also laying a broad foundation for the future. Nine miles of sanitary sewers, designed to meet the needs of a population of 80,000 people, are now being constructed under the supervision of J. B. McCrary Company, engineer, of Atlanta, Ga. The amount of paving now down is seen to be inadequate, and already noise of more money for good roads is being heard, along with the \$65,000 already available for sewers and extension of water supply now under contract. More will be heard from Clinton later."

To Build \$250,000 Distilling Plant.

The MANUFACTURERS RECORD is advised by W. H. Childs, vice-president and general manager of the Barrett Manufacturing Co. of New York and other cities, that his company has appropriated \$250,000 to build and equip a distilling plant at Birmingham, believing that the development of the South will warrant the company making Birmingham its center. In November the MANUFACTURERS RECORD announced that the company had purchased 31 acres of land between Corey and Ensley as site for a plant. The company manufactures coal-tar products for various purposes, and now has several plants, including one at Ensley.

To Irrigate 62,500 Acres.

The Consolidated Reservoir Co. is being organized to take over the Grand Falls Mutual Irrigation Co., the Big Valley Irrigation Co., and the Grand Falls Lake & Reservoir Co. of Grand Falls, Tex. About \$500,000 has been expended, and it is proposed to construct other and larger reservoirs so that the entire system will irrigate 62,500 acres of land, the further construction to cost from \$800,000 to \$1,000,000. The Grand Falls Mutual Reservoir Co. is being organized to take over, operate and maintain the completed system. A. J. Adcock of Grand Falls and the Rosecrans Engineering Co. of Chicago are the engineers in charge.

To Drain Mary Mac Plantation.

Referring to its plans for completing the drainage of its plantation at Robinsonville, Miss., the Mary Mac Plantation Co., with executive offices at Memphis, writes to the MANUFACTURERS RECORD that the company has closed contracts for completing the drainage of its entire plantation, comprising about 10,000 acres. This work will include 7½ miles of dredge ditches, contract for which was awarded to the Lewis Engineering & Construction Co. of Knoxville, Tenn., and 63 miles of lateral ditches, contract for which was awarded to Lowrence Bros. & Co. of Memphis.

Little Rock's Substantial Growth.

Board of Trade,
Little Rock, Ark., January 9.
Editor Manufacturers Record:
The Board of Trade instructs me to thank you for your congratulatory telegram recently received. It is very much appreciated. The Little Rock Board of Trade fully recognizes the splendid and efficient work you are doing for the development of this part of the United States. It is having its effect, for no part of the country is growing more rapidly in a substantial way than this city and State.

GEO. R. BROWN, Secretary.

Implements and Tools Needed.

Herman Dulliere, hardware merchant, Saventhem, Belgium, writes to the MANUFACTURERS RECORD:

"I do not handle machinery, as a rule, but rather devote myself to sale of tools and equipments for agricultural work and for other trades. I should appreciate it very much if you could secure agencies for me for the sale of such goods in Belgium. Please give me, if you can, the addresses of some firms who might be interested in such work."

Seeking Factory Location in South.

The M. B. Kendrick Company of Corning, Ky., is seeking a location in the South for a plant to manufacture soap and soap compounds. It now has a plant with daily capacity of 2500 boxes of its product, and will probably enlarge this in the new location selected.

Fertilizer Factory Completed.

The Southern Cotton Oil Co. of New York has completed the fertilizer factory it has had under construction at Jackson, Ga. This plant comprises a 50x100-foot building equipped with machinery for a daily capacity of from 75 to 100 tons of fertilizer. The machinery mixes, weighs and sacks the product.

Henry W. Wood, the retiring president of the Chamber of Commerce of Richmond, Va., in his review of the year in that city said that the manufacturing output had increased 6.1 per cent. during the year, jobbing sales 4.15 per cent., bank deposits 15.18 per cent., banking capital and surplus 9.22 per cent. and building operations 50 per cent.

FINANCIAL NEWS

The MANUFACTURERS RECORD invites information about Southern financial matters, items of news about new institutions, dividends declared, securities to be issued, openings for new banks, and general discussions of financial subjects bearing upon Southern matters.

Review of the Baltimore Market.

Office MANUFACTURERS RECORD,
Baltimore, Md., January 17.

The Baltimore stock market was moderately active during the past week, and prices were well sustained. In the trading United Railways common sold at 18¼ to 18½; do. incomes, 62¼ to 63; do. funding 5s, 86¼ to 86¾; do. notes, 5s, 99¼ to 99½; United 4s, 85½ to 86¼; United Electric Light & Power 4½s, 93¼; Consolidated Gas, Electric Light & Power preferred, 102¼ to 104; do. 4½s, 88½ to 89½; Consolidated Gas 5s, 109¼; do. 4½s, 97¼ to 97½; Seaboard Air Line preferred, 49 to 48¾; Seaboard Company second preferred, 63¼ to 63; Seaboard 4s, 89¼; do. stamped, 89 to 89¼; do. adjustment 5s, 83½ to 84; Mt. Vernon-Woodberry Cotton Duck 5s, 78 to 77½; G. B. S. Brewing common, 1½; do. 4s, 36¼ to 36.

Bank stocks sold as follows: Farmers and Merchants', 51; German, 108; Merchants', 185; Bank of Baltimore, 163 to 164; Mechanics', 29; Old Town, 13. Fidelity & Deposit sold at 149 to 149½; Mercantile Trust, 148½ to 151; American Bonding, 78½ to 77; Baltimore Trust, 165 to 167; Maryland Casualty, 95½ to 97; Maryland Trust common, 94; United States Fidelity & Guaranty, 180.

Other securities were traded in thus: Fairmont & Clarksburg Traction 5s, 100¼ to 100½; Pennsylvania Water & Power common, 58 to 60; Pennsylvania Water & Power 5s, 90½; Houston Oil common, certificates, 9¼ to 8½; do. preferred, certifi-

cates, 71 to 70½; Macon, Dublin & Savannah 5s, 101 to 101½; Augusta & Aiken common, 25¼ to 25½; do. preferred, 79; Atlantic Coast Line convertible debenture 4s, 101¼ to 101½; do. Connecticut 5-20s, 91½; do. 4s, certificates, 81½; Baltimore Electric preferred, 41; do. 5s, stamped, 95; Baltimore Brick common, 2½; do. 5s, 84; Chicago Railways 5s, 100¼ to 100½; United States Steel common, 66½ to 67½; Baltimore City 3½s, 1940, 93½ to 94; do. 4s, 1961, 101¼; do. 3½s, 1980, 90¼; do. do. 1928, 95 to 94½; do. do. 1930, 94½; Georgia Southern & Florida 5s, 107½; Knoxville Traction 5s, 106¼; Virginia Midland 4th, 104¼; Georgia & Alabama consolidated 5s, 107½; Columbia, Newberry & Laurens 3s, 75½; Fairmont Coal 5s, 96½; Consolidation Coal, 101 to 100; Fairmont & Clarksburg Traction preferred, 83½ to 84; Norfolk & Portsmouth Traction 5s, 88½ to 89; Macon Railway & Light 5s, 101¼; Canton Company (Baltimore), 136 to 140; Northern Central Railway stock, 127½ to 128½; Maryland & Pennsylvania common, 32½ to 33; Maryland Electric 5s, 98½ to 99; Georgia, Carolina & Northern 5s, 105¼ to 105½; Virginia Railway & Power common, 43¾ to 44¾; Columbia & Greenville first 6s, 107; Milwaukee refunding 4½s, 94 to 94¼; Jamison Coal & Coke (George's Creek) 5s, 93¼; Suffolk & Carolina 5s, 103; St. Joseph Railway, Light, Heat & Power 5s, 99¼; Baltimore Traction (North Baltimore Division) 5s, 111; Norfolk & Atlantic Terminal 5s, 94½; Charleston Consolidated Electric 5s, 97; Norfolk Railway & Light 5s, 100¼.

SECURITIES AT BALTIMORE.

Last Quotations for the Week Ended January 17, 1912.

Railroad Stocks.	Par.	Bid.	Asked.
Atlantic Coast of Conn.	100	257½	261
Fairmont & Clarks. Trac.	100	77	100
Fairmont & Clarks. Trac. Pfd.	100	82	84½
Georgia Sou. & Fla. 1st Pfd.	100	94	
Georgia Sou. & Fla. 2d Pfd.	100	75	90
Maryland & Pennsylvania	100	30	36½
Norfolk Railway & Light	25	26	
Seaboard Co. 2d Pfd.	100	62	64
United Rys. & Elec. Co.	50	18½	19½
Virginia Ry. & Power Com.	100	44½	
Bank Stocks.			
Bank of Baltimore	100	164	
Citizens	100	40	
Exchange	100	161	
Farmers & Merchants	40	50	51½
First National	100	135	
German	100	108	110
Howard	100	14	15
Marine	30	43	
Mechanics	100	29½	30
Merchants	100	185	110½
National City	100	133½	135
Union	100	133½	135
Western	20	37	
Trust, Fidelity and Casualty Stocks.			
American Bonding	25	76	78
Baltimore Trust	100	166	
Colonial Trust	50	27½	
Continental Trust	100	221	225
Fidelity & Deposit	50	149	150
Maryland Trust	100	93½	94
Maryland Trust Pfd.	100	116	123
Maryland Casualty	25	96	97
Mercantile Trust & Deposit	50	149	150
Title Guaranty & Trust	100	140	
Miscellaneous Stocks.			
Ala. Con. Coal & Iron	100		40
Ala. Con. Coal & Iron Pfd.	100		70
Baltimore Brick	100	1	3
Baltimore Electric Pfd.	100	41	42
Con. Gas, Elec. Lt. & P. Com.	100	97½	97
Con. Gas, Elec. Lt. & P. Pfd.	100	104	
Consolidation Coal	100	100	101
G.-B.-S. Brewing Co.	100	1¼	2½
Railroad Bonds.			
Atlantic Coast Conv. Deben.	4s.	101½	101½
At. Coast (Conn.) 4s, Cfs.	5-20s.	91	
Atlantic Coast (Conn.) 5s, Cfs.		105½	
Atlantic Coast 4s, Cfs.		82	
Atlantic Coast (S. C.) 4s.		97	
At. Coast (L. & N. Col. Tr.) 4s.		101¼	101½
Balto. & Annapolis S. L. 5s.		96	
Balto. & Harrisburg Ext. 5s.		103½	
Charleston & West. Car. 5s.		106½	106½
Coal & Coke Railway 5s.		101	
Coal & Iron Railway 5s.		101	
Florida Southern 4s.		92½	
Georgia & Alabama 5s.		107	107½
Georgia, Car. & North. 1st 5s.		105½	
Georgia Southern & Fla. 1st 5s.		107½	108
Macon, Dublin & Savannah 4s.		101	101½
Potomac Valley 1st 5s.		108	
Raleigh & Augusta 1st 5s.		114½	
Seaboard Air Line 4s.		89½	
Seaboard 4s, Stamped.		88½	89½
Seaboard Adjustment 5s.		83½	84
Seaboard Refunding 4s.		82½	83½
Virginia Midland 4th 5s.		108½	104½
Virginia Midland G. M. 5s.		108	108½
Western N. C. Con. 6s.		108½	
Wilmington & Weldon 5s.		110¼	112
Street Railway Bonds.			
Anacostia & Potomac 5s.		100½	101
Anacostia & Potomac 5s, Gtd.		100	

Augusta Railway & Electric 5s.	100½
Baltimore, Sp. Pt. & C. 4½s.	96
Baltimore Traction (N. B.) 5s.	111½
Central Railway (Balto.) Con. 5s.	107
Central Railway (Balto.) Ext. 5s.	107½
Charleston Con. Elec. 5s.	96
Citizens' R. & P. of N. N. 5s.	79½
City & Suburban 5s (Balto.)	105
City & Suburban 5s (Wash.)	103½
Fairmont & Clarksburg Trac. 5s.	100¼
Lake Roland Elevated 5s.	108½
Lexington Railway 1st 5s.	95
Macon Railway & Light 5s.	101
Maryland Electric Railways 5s.	98½
Memphis Street Railways 5s.	95
Newport News & Old Point 5s.	95
Newport News & Old Pt. G. M. 5s.	68
Norfolk & Portsmouth Trac. 5s.	88½
Norfolk Railway & Light 5s.	100
United Railways 1st 4s.	85½
United Railways Income 4s.	62½
United Railways Funding 5s.	98½
United Railways Notes 5s.	95
Virginia Railway & Power 5s.	96½

SOUTHERN COTTON-MILL STOCKS.

Quotations Furnished by William S. Glenn, Broker, Spartanburg, S. C., for Week Ending January 17, 1912.

Abbeville Cotton Mills (S. C.)	Bid.	Asked.
Aiken Mfg. Co. (S. C.)	90	
American Spinning Co. (S. C.)	160	
Anderson Cotton Mills (S. C.)	48	
Anderson Cot. Mills (S. C.) Pfd.	100	
Arcadia Mills (S. C.)	92	
Arkwright Cotton Mills (S. C.)	99	100
Brandon Mills (S. C.)	100	102
Brogan Mills (S. C.)	90	103
Chiquola Mfg. Co. (S. C.)	170	
Clifton Mfg. Co. (S. C.) Pfd.	97	
Clinton Cotton Mills (S. C.)	120	
Courtenay Mfg. Co. (S. C.)	100	
Dallas Mfg. Co. (S. C.)	99	
Darlington Mfg. Co. (S. C.)	80	
D. E. Converse Co. (S. C.)	95	100
Drayton Mills (S. C.)	117	
Eagle & Phenix Mills (Ga.)	162	175
Easley Cotton Mills (S. C.)	60	62
Enoree Mfg. Co. (S. C.)	96	100
Enoree Mfg. Co. (S. C.) Pfd.	57	62
Gaffney Mfg. Co. (S. C.)	120	
Gainesville Cotton Mills (Ga.)	72	80
Glenwood Cotton Mills (S. C.)	140	145
Graniteville Mfg. Co. (S. C.)	57	60
Greenwood Cotton Mills (S. C.)	90	100
Grendel Mills (S. C.)	160	
Hartsfield Cotton Mill (S. C.)	160	
Henrietta Mills (N. C.)	160	175
Inman Mills (S. C.)	100	105
King Mfg. Co. J. P. (Ga.)	80	85
Lancaster Cotton Mills (S. C.)	130	
Lancaster Cot. Mills (S. C.) Pfd.	97	100
Langley Mills (S. C.)	104	112
Laurens Mills (S. C.)	120	135
Limestone Mills (S. C.)	155	160
Lockhart Mills (S. C.)	90	100
Lockhart Mills (S. C.) Pfd.	90	100
Loray Cotton Mills (N. C.) Pfd.	95	
Mariboro Cotton Mills (S. C.)	102	
Mills Mfg. Co. (S. C.)	95	
Molokoh Mfg. Co. (S. C.)	110	
Monaghan Mills (S. C.)	105	110
Monarch Cotton Mills (S. C.)	105	110
Newberry Cotton Mills (S. C.)	125	130
Ninety-Six Cotton Mills (S. C.)	130	150
Norris Cotton Mills (S. C.)	121	130
Olympia Cotton Mills (S. C.)	90	
Orr Cotton Mills (S. C.)	90	93
Pacolet Mfg. Co. (S. C.)	95	100
Pacolet Mfg. Co. (S. C.) Pfd.	95	25
Parker Preferred	65	
Pelzer Mfg. Co. (S. C.)	163	
Piedmont Mfg. Co. (S. C.)	175	177
Poe Mfg. Co. F. W. (S. C.)	110	115
Saxon Mills (S. C.)	130	
Spartan Mills (S. C.)	120	130
Trion Mfg. Co. (Ga.)	130	
Tucapau Mills (S. C.)	300	60
Union-Buffalo (S. C.) 1st Pfd.	15	
Union-Buffalo (S. C.) 2d Pfd.	15	
Victor Mfg. Co. (S. C.)	110	115
Warren Mfg. Co. (S. C.)	90	95
Warren Mfg. Co. (S. C.) Pfd.	100	105
Washington Mills (Va.)	28	
Washington Mills (Va.) Pfd.	106	110
Whitney Mfg. Co. (S. C.)	110	
Wilcassett Mills (N. C.)	135	
Woodruff Cotton Mills (S. C.)	105	
Woodside Cotton Mills (S. C.)	100	
Watts Mills (S. C.)	70	85
Williamston Mills (S. C.)	110	125

Home Insurance Co.

The Home Insurance Co., 56 Cedar street, New York, has issued its one hundred and seventeenth semi-annual statement, which shows a surplus as regards policy-holders of \$18,615,440.71. The total assets are \$32,146,564.95. The cash capital is \$3,000,000, the reserve premium fund \$11,798,635 and the surplus over contingencies and all liabilities, including capital, \$13,815,440.71. The company's investments include State and city bonds having a market value of \$6,244,320, railroad bonds \$3,427,900, railroad stocks

\$10,098,300, besides other securities. Elbridge G. Snow is president; Emanuel H. A. Correa and Frederic C. Busswell, vice-presidents; Areunah M. Burtis and Charles L. Tyner, secretaries; Clarence A. Ludlum and Henry J. Ferris, assistant secretaries. The company was organized in 1853.

FINANCIAL CORPORATIONS.

Ala., Anniston.—Official: City Bank & Trust Co., capital \$100,000, will have officers thus: C. J. Houser, president; James Keith, Jr., vice-president; O. M. Alexander, cashier.

Ala., Birmingham.—The Universal Mortgage Bond Co. is reported organized by John G. Cooke, president of the Montgomery Coal Washer Co.; D. E. Manasco, W. R. Major and J. H. Cranford, the latter of Jasper, Ala.; capital \$250,000.

Ala., Birmingham.—The American Finance & Bond Co. has incorporated with authorized capital of \$25,000. G. W. Pratt of Tuscaloosa, Ala., is president; C. Ellis, secretary; J. C. Corcoran, treasurer, both of Birmingham.

Ala., Mobile.—The Mobile Realty & Banking Co. is incorporated; capital \$4000, with \$1000 paid in; incorporators, Samuel Zimmern, H. T. Somers and Jesse F. Hogan.

Ark., Morrilton.—Official: Rainwater Bank & Trust Co., a new concern, is incorporated; capital \$50,000, with \$25,000 paid in; began business January 12; president, Wood Rainwater; vice-president, Cloudy Night Rainwater; secretary and treasurer, Night Rainwater.

Ala., Waverly.—Farmers and Merchants' Bank of Waverly, capital \$10,000, is incorporated by J. M. Moreman, J. A. Webb, L. H. Dawson, Charles Maybury, B. P. Patrick, J. W. Shealy, H. L. McClendon, Claude Holston, H. E. Hart, H. M. Brown, J. J. Pennington, Emma D. Jones, T. O. Walton and others.

Ala., Rockford.—The Bank of Rockford, capital \$10,000, is incorporated by E. V. Jones, W. B. McCain, George B. McDonald and J. W. Brown.

D. C., Washington.—Legal notice is given that the Munsey Trust Co., capital \$2,000,000, will apply for charter February 7. Wilton J. Lambert is counsel. The incorporators are Frank A. Munsey, Perry Belmont, W. T. DeWart, C. H. Pope and James Bair of New York, S. W. Woodward, James F. Oyster, William F. Gude, Gist Blair, Edward McLean, Wilton J. Lambert, F. A. Walker, H. M. Clabaugh, A. S. Worthington, William A. Hill, John H. Nolan, Ashley M. Gould, William Henry White, William Wallace Chiswell, Thomas C. Bradley, Clarence Moore, A. Lisner and Julius Garfinkle of Washington, D. C.; C. E. Nicol of Alexandria, Va.; Clarence W. Watson of West Virginia, George R. Galtier and Stuart Olivier of Baltimore. The company will have offices in the Munsey Building.

Ga., Scotland.—C. H. Herman of Sandersville, Ga., is reported organizing a bank for Scotland with \$25,000 capital.

Ga., Vidalia.—The Vidalia Loan & Trust Co., is reported in process of organization; capital \$50,000. The Mayor may be able to give information.

Ky., Jackson.—Official: The Breathitt County Bank, the Jackson Deposit Bank and the First National Bank are to be merged under the name of the First National Bank with a capital of \$100,000. J. T. Hindman is interested.

La., Shreveport.—Official: Herndon-Jeter Company is chartered; capital \$50,000. J. R. Herndon is president, J. W. Jeter, Jr., vice-president, L. P. Ducournau secretary, E. F. Savage treasurer, Cecil Herndon completing the directorate. Began business January 1.

Md., Seat Pleasant (via Washington, D. C.).—The Farmers and Mechanics' Bank, capital \$25,000, is reported being organized, and the United States Trust Co., Washington, D. C., is receiving payments on subscriptions therefor.

Mo., Competition.—The Bank of Competition, capital \$10,000, is chartered; directors, James T. Emerson, J. M. Massey, A. L. Claxton, J. A. Shammel, W. H. Courley, Reuben Noble, A. W. Hillhouse, G. E. Wood and W. E. Edwards.

Miss., Lexington.—The Holmes County Abstract & Title Guaranty Co., capital \$1000 to \$10,000, has published its charter; incorporators, W. A. Pierce, H. W. Watson, A. M. Pepper and F. A. Eggleston, all of Lexington, Miss.

Mo., Grovespring.—The Grovespring Bank, capital \$10,000, is reported chartered; directors, A. H. Hawkins, E. H. Davis, L. W. Cot-

tengem, J. M. Buttram, D. S. Buttram, William Scrivner and J. C. Hart.

Mo., St. Louis.—The Kobusch Investment Co. is incorporated; capital \$39,000. Robert H. Kobusch is the principal stockholder. Others are Ida Kobusch and Norma Kobusch. Real estate and investment business.

Mo., St. Louis.—Chartered: The North Side Savings and Loan Association of St. Louis; capital \$100,000; incorporators, John C. Grenlich, Richard Weissenborn, J. Charles Mueller, William Kassebaum, John C. Preuser, Walter N. Fisher and W. A. Mueller.

N. C., Asheville.—The Central Bank & Trust Co., recently chartered, will, it is announced, begin business March 1; capital \$50,000, with \$25,000 paid in. C. W. Brown is president.

N. C., Atkinson.—The Bank of Atkinson, capital \$10,000, is chartered; may begin with \$5000; incorporators, Dr. J. T. Hoggard, J. R. Hawes, E. E. Murphy, G. W. Smith, E. A. Hawes, E. A. Hawes, Jr., and W. H. Lewis.

N. C., Catawba.—Official: The report that the Bank of Catawba was being organized is declared an error. It was the People's Bank that was organized last May which began business January 4. It did not open sooner on account of delay in erecting building. J. H. Pitts is president and W. B. Walker cashier.

N. C., Charlotte.—Julian H. Little, president of the Charlotte Trust & Realty Co., is reported organizing a new bank.

N. C., Charlotte.—Official: The Charlotte Savings & Trust Co., N. Tryon St., chartered and incorporated; capital \$50,000; organizers, H. M. Wade, M. W. Moore, M. W. Tye, H. P. Dew, D. M. Abernathy, Jim Walker and J. T. Gattis. Business begins January 15.

N. C., Wilmington.—The Carolina Building and Loan Association is reported asking for charter; incorporators, L. W. Moore, J. Haughton James, E. T. Taylor, George O. Gaylord, J. O. Carr, J. W. Yates and J. T. King.

Okla., Grove.—Official: The First National Bank of Grove, Inc., is a conversion of the Bank of Grove; capital, \$25,000; surplus, \$5000. Began business December 30. J. E. Kelley is president, Nat M. Perry vice-president, T. H. Thompson cashier, N. W. Johnson assistant cashier, the board of directors being composed of the first three officers, W. E. Ross and C. F. Walker.

S. C., Charleston.—The Realty & Investment Co. of Charleston, capital \$6000, has been granted a commission; petitioners, A. M. Manigault, T. R. Waring and A. M. Huger.

S. C., Greenville.—Official: Co-operative Investment Co. incorporated; J. E. Slinne is president, George Wrigley vice-president, S. R. Riley secretary-treasurer. It was organized last July.

S. C., Greeleyville.—The People's Insurance & Real Estate Co. of Greeleyville, capital \$5000, has been granted a commission; incorporators, E. B. Rhodus, J. F. Montgomery, S. V. Taylor and C. E. Register.

S. C., Orangeburg.—Official: The Orangeburg Trust Co., a new concern, is chartered; capital \$1500; will begin business immediately. J. A. Berry is president and treasurer; W. C. Wolfe, vice-president. The institution will write insurance only.

S. C., Summerville.—The Jedburg Investment Co. of Summerville, capital \$9000, has been granted a commission; petitioners, C. D. Winningham and Legare Walker.

S. C., Sumter.—The City National Bank, it is reported, will succeed the Sumter Savings Bank on January 15; capital \$150,000; surplus \$26,250. G. A. Lemmon is president, I. C. Strauss vice-president, George L. Ricker cashier, J. G. R. Wilder assistant cashier.

Tenn., Chattanooga.—The American Trust & Banking Co. has organized and will begin business immediately at 8th and Broad Sts. Directors: H. S. Probasco, president; E. Y. Chapin, vice-president and trust officer; S. L. Probasco, second vice-president; Z. C. Patten, H. Clay Evans, M. M. Hedges, F. A. Gentry, A. E. Tucker, Gaston Raul, B. F. Thomas, J. J. Mahoney, H. F. Temple, J. F. Johnston, Charles Hardie and O. L. Bunn. D. S. Griswold is cashier.

Tenn., Knoxville.—Knoxville Title Co. is chartered; capital \$100,000; incorporators, B. Morrell, Fred Giddings, Richard P. Johnson, Geo. I. Washlam and W. R. Page.

Tenn., Memphis.—S. M. Williamson & Co., Inc., have applied for charter to conduct investment and brokerage business; capital \$25,000; incorporators, S. M. Williamson, M. Eugene Clark, L. O. Lindgren, Helen Kahn, Paul J. Kent and R. P. Cary.

Tenn., Nashville.—The Title Guaranty & Trust Co., capital \$200,000, has applied for charter. It is to supplement the work of the Security Title Co., with which most of

the organizers of the new company are connected. Incorporators: Joseph H. Thompson, Walter Keith, Johnson Bransford, V. I. Witherspoon, Whiteford R. Cole, J. Harry Howe, W. C. Dillrell, Robert Lusk, A. H. Robinson, Eustice A. Hall, A. M. and P. D. Maddin.

Tenn., Soddy.—Official: The Soddy Banking Co., a new concern, is incorporated; capital \$10,000. C. W. Abel is president; T. H. McKown, vice-president; C. C. Jones, cashier; directors, H. M. Bowling, N. E. Cobleigh, W. L. Templeton, Sam L. Byrd, Jas. A. Roberts, T. J. Welch and J. B. F. Lowry.

Tex., Elkhart.—The Guaranty State Bank of Elkhart, capital \$10,000, has begun business. Directors: J. D. DuPuy of Palestine and Elkhart, president; B. J. Parker, vice-president; Charles Watkins, cashier; T. M. Campbell, Jr., and D. S. Lively.

Tex., Granger.—Farmers and Merchants State Bank of Granger chartered; capital \$25,000; incorporators, A. E. Bampton, W. A. Harrell and R. A. Hodges.

Tex., McGregor.—The Farmers & Merchants' State Bank of McGregor, capital \$25,000, has been licensed to begin business.

Tex., Ranger.—Farmers and Merchants' State Bank, capital \$25,000, is reported chartered; incorporators, A. E. Hampton, W. A. Hartsell, R. A. Hodges and others.

Tex., San Antonio.—The Standard Trust Co., capital \$250,000, is chartered. J. M. Bennett is the principal stockholder, and he, with J. M. Bennett, Jr., owns nearly 1900 shares of the 2500 shares of stock. Other stockholders are Robert J. Kleberg of Kingsville, Tex.; W. J. Moore, Geo. R. Stumberg, Frederick J. Combe and S. J. Brooks of San Antonio; E. B. Carruth of Yoakum, Tex., and J. J. Welder of Victoria, Tex.

Tex., San Antonio.—Concerning the report that he and others were organizing a bank and trust company in San Antonio, G. S. McElroy says that the institution is only proposed and its organization is not likely until June or July next, if at all.

Tex., San Marcos.—Citizens State Bank of San Marcos is chartered; capital \$25,000; incorporators and directors, J. H. Berkley, Ed A. Christian, J. R. Ploetz of San Marcos, T. B. Wathen and W. W. Collier of San Antonio; attorney, A. P. Barrett of San Antonio, Tex.

Tex., Springtown.—First State Bank of Springtown, with paid-up capital of \$15,000, began business January 10; J. F. Ward, president; J. D. Doughty, vice-president; J. D. Hutcheson, cashier.

Tex., Waco.—The Brazos Valley Trust Co., capital \$500,000, has organized and will apply for charter. Officers: Sam Sanger, president; S. J. Jennings, late of Kerens, I. A. Goldstein and G. W. Cole, Jr., Belton, vice-presidents; F. M. Gardner, treasurer.

Tex., Waco.—An official letter says organization of the Brazos Valley Trust Co. has not yet been completed. Gabine J. Winter is in charge of organization.

W. Va., Wheeling.—The Real Estate Savings Bank, capital \$25,000, has received its charter and, it is reported, has organized. As soon as quarters are secured business is to begin. Richard Robertson, the Hease & Kirchner Company and others are interested.

W. Va., Huntington.—The consolidation of the First National Bank and the First Trust Company and Savings Bank, under the name of the former, is reported ratified. Its capital was increased from \$500,000 to \$750,000. C. W. Watts and H. B. Hagen were added to the board. J. L. Caldwell is president, D. I. Smith and L. V. Guthrie vice-presidents, R. L. Archer cashier and G. D. Miller assistant cashier.

W. Va., Spencer.—Reported chartered: The First National Bank of Spencer; capital \$50,000; John W. Looney, president; John M. Baker, vice-president, and T. A. Hartley, cashier.

W. Va., St. Albans.—The Coal River Insurance Agency of St. Albans is chartered; capital \$10,000; incorporators, M. C. Jennings, E. L. Jennings, M. M. Hendrix, Mabel Hendrix and W. C. Sionaker, all of St. Albans.

NEW SECURITIES.

Ala., Cullman.—Reported that a legal decision has been received by the Cullman Commercial Club that Cullman county can at present issue no more than \$204,475.50 of bonds for road building. This is with reference to a contemplated issue of \$400,000.

Ala., Linden.—S. A. Kean & Co. of Chicago are reported to have purchased the \$10,000 of school-building bonds at par.

Ala., Montgomery.—Reported that bids will be received until noon January 30 by Robert Tait, City Treasurer, for \$60,000 of 5 per cent. 10-year street-assessment bonds.

Ala., Tuscaloosa.—An ordinance is approved for the issue of \$35,000 of 5 per cent. 30-year school-building bonds.

Ala., Tuscaloosa.—An ordinance is approved for the issue of \$35,000 of 5 per cent. 30-year school-building bonds. J. V. Jones is City Clerk.

Ala., Wetumpka.—John Nuveen & Co. of Chicago are reported to have bought the \$50,000 of Elmore county road bonds for \$51,010. There are now \$125,000 sold, leaving \$45,000 to be disposed of.

Ark., Heber Springs.—R. G. Chandler, secretary school directors, will, it is reported, receive bids at any time for \$20,000 of 5 per cent. 30-year school-building bonds.

Fla., Brooksville.—F. R. Wilson, Town Clerk, will, it is reported, receive bids at any time for \$12,000 of improvement bonds; denomination \$100.

Fla., Fort Pierce.—Bids will be received until 8 P. M. February 14 for \$90,000 of 6 per cent. 30-year improvement bonds. F. M. Tyler is City Clerk.

Fla., Madison.—Official: Voted January 2: \$30,000 of 6 per cent. bonds for purchase of the Madison Electric Light & Power Co. Bids will be asked about April 1, 1912. R. H. Rowe is Mayor.

Ga., Americus.—Official: The ordinance committee of the Council has been directed by resolution to prepare an ordinance calling an election for bonds. J. E. Mathis is Mayor.

Ga., Claxton.—P. M. Anderson, City Attorney, says that all bids were rejected January 16 for the \$25,000 of 5 per cent. water-works and electric-light bonds and they will be readvertised for sale in the Manufacturers Record on January 25 and February 1.

Ga., Columbus.—Reports state that an election will soon be held to vote on \$50,000 of bridge bonds.

Ga., Manchester.—Bids will be received until noon February 15, it is reported, by James S. Peters, City Clerk, for \$15,000 of 5 per cent. electric-light bonds; denomination \$500; dated January 1, 1912; maturity January 1, 1932 to 1941.

Ga., Parrott.—J. H. Hilsman & Co., Atlanta, are reported to have been awarded at 102.50 the \$6000 of 6 per cent. school-building bonds.

Ky., Barbourville.—An election is called for February 2 to vote on school-building bonds.

Ky., Jackson.—Adams & Holaday, attorneys, will, it is reported, receive bids at any time for \$10,000 of 6 per cent. graded school district building bonds.

La., Lake Charles.—The \$140,000 of school bonds recently reported sold are 5 per cent. 36-year, denomination \$500, and dated February 1, 1912. C. B. Richard is Mayor, and S. O. Shattuck, City Clerk.

Ky., Lexington.—Carey & Reed, contractors, are reported to have been awarded the \$10,182.22 of 6 per cent. street-improvement bonds at par and interest.

Ky., Murray.—The State Court of Appeals, says a report from Frankfort, has sustained the validity of the \$23,000 of water-works and electric-light bonds voted by the people of Murray.

La., Baton Rouge.—Official notice is given that bids will be received until 10 A. M. January 30 by the Parish Board of School Directors for \$75,000 of 5 per cent. 10-year high-school bonds; denomination \$1000; district No. 1. Benj. J. Jones is president of the board; H. K. Strickland, secretary and superintendent.

La., Lockport.—Reported voted: \$30,000 of high-school bonds.

La., Raceland.—The second school district of Lafourche parish is reported to have voted \$25,000 of high-school building bonds.

La., Saint Bernard.—Registered: \$500,000 of 5 per cent. (denomination \$1000) drainage bonds for Saint Bernard parish for the Bayou Terre aux Boeufs.

Md., Frederick.—It is contemplated to issue \$75,000 of school bonds and \$50,000 for water improvements.

Miss., Biloxi.—It is announced that \$50,000 of Central School bonds will be issued. Jas. V. Hagan is City Clerk.

Miss., Longview.—Official: Bids will be received until 1 P. M. February 15 for \$10,000 of 20-year, not over 6 per cent., bonds; denomination \$500; for agricultural high school. G. W. Johnson is Mayor and E. B. Gillespie clerk.

Miss., Vicksburg.—It is now stated that the election to vote on \$100,000 of street-improvement and \$400,000 of water-works plant bonds will be held February 14.

Mo., Jefferson City.—Bids are now asked until noon January 15 for the \$3,500,000 of 3½ per cent. Capitol Building bonds of the State

of Missouri. James Cowgill is State Treasurer.

Mo., Mountain Grove.—Official: Bids will be received until February 12 for \$30,000 of 5 per cent. 20-year water-works bonds dated February 15. W. S. Candler is Mayor and Hollen Kelley City Clerk.

N. C., Beaufort.—The date for receiving bids for the \$10,000 of 5 per cent. town bonds has been changed from January 11 to January 25 at 8 P. M. A. T. Gardner is Mayor and Thomas Thomas Town Clerk.

N. C., Black Mountain.—Official: The State Depository Bank of Columbus, O., has purchased at par the \$15,000 of 6 per cent. 30-year water and sewer bonds dated January 1, 1912; denomination \$1000. L. W. Morgan is Mayor and Z. V. Crawford Town Clerk.

N. C., Black Mountain.—L. W. Morgan, Mayor, writes that the \$15,000 of sewer and water bonds have been sold.

N. C., Charlotte.—Official: \$110,000 of 6 per cent. 1-10-year street-improvement bonds, denomination \$500, dated January 1, 1912, have been sold by E. W. Thompson, chairman of the finance committee, to W. M. Tye of Charlotte at 104.3.

N. C., Greensboro.—Special dispatch from T. J. Murphy, Mayor, to the Manufacturers Record says that the \$30,000 school bonds were sold to Seasongood & Mayer of Cincinnati at \$101.002.

N. C., Greensboro.—An issue of \$100,000 of street-improvement bonds is contemplated by the City Commissioners.

N. C., Kings Mountain.—Kings Mountain precinct of Cleveland county, according to a report quoting J. M. Patterson, chairman of the Highway Commission, has sold the \$25,000 of road bonds voted last summer.

N. C., Littleton.—Official: Bids are invited until 8 P. M. Thursday, February 15, for \$10,000 of 6 per cent. 20-year coupon electric-light plant bonds; denomination \$1000. Address T. J. Miles, Mayor; E. C. Bobbitt, Clerk.

N. C., Morehead City.—Official: Bids will be received until 8 P. M. March 4 for \$15,000 of 5½ per cent. 30-year water, electric and street floating debt bonds. R. M. Aycock is City Secretary.

N. C., Sanford.—A special dispatch to the Manufacturers Record says that the election in Lee county for \$100,000 of good-roads bonds was carried January 16 by a majority of over 300.

N. C., Wilson.—All bids for the \$75,000 of refunding bonds are reported rejected.

N. C., Wilmington.—Official: The \$300,000 of street and \$100,000 of water and sewer 4½ per cent. 40-year bonds, denomination \$1000, have been sold to the Southern National Bank and the Atlantic Trust & Banking Co. of Wilmington, respectively, at par and \$10 and par and \$33, the two institutions being under the same control. Bonds are dated January 1, 1912. Joseph D. Smith is Mayor and Thos. D. Meares City Clerk and Treasurer.

N. C., Winston-Salem.—Winston Township has voted \$100,000 of bonds to aid construction of the Randolph & Cumberland Railroad. The election in Broadway Township, adjoining, for \$30,000 failed, but another election is expected on the proposition.

N. C., Salem, P. O. Winston-Salem.—Bids are reported being received for \$50,000 of school, \$15,000 of street and \$10,000 of sewer 5 per cent. 30-year bonds.

Okla., Hobart.—Official: \$100,000 of 5 per cent. city hall, water and park bonds, 25-year, denomination \$1000, are sold to R. J. Edwards of Oklahoma City.

Okla., Lamont.—R. J. Edwards of Oklahoma City, according to press dispatches, has been awarded \$20,000 of 6 per cent. water bonds.

Okla., Lawton.—Farson, Son & Co. of Chicago are reported to have been awarded \$70,000 of 5 per cent. 24½-year funding bonds at \$700 premium.

Okla., Oklahoma City.—It is contemplated to call an election for \$250,000 of bonds for State Capitol and other purposes.

Okla., Paul's Valley.—Arrangements are reported being made for the sale of \$15,000 of school-building bonds.

Okla., Pawhuska.—Piersol & Co. of Oklahoma City, it is reported, have purchased at \$3000 premium the \$100,000 of Osage county courthouse and jail bonds recently voted.

Okla., Sapulpa.—Reported that \$63,850 of 6 per cent. 20-year funding bonds have been purchased at 102.25 and interest by Sutherland & Co. of Kansas City, Mo.

Okla., Shawnee.—Spitzer, Rorick & Co., Toledo, are reported to have been awarded \$35,000 of refunding bonds.

Okla., Tulsa.—The School Board has taken steps toward calling an election for Febru-

ary 20 to vote on \$300,000 of school-building bonds. Daniel Hunt is secretary.

Okla., Wakita.—Reported voted: Water-plant bonds.

S. C., Leesville.—Reported sold \$6000 of 6 per cent. 20-year refunding bonds of Lexington county free school district No. 15.

S. C., Saluda.—Town improvement bonds are reported voted.

S. C., Spartanburg.—The City Council is taking steps to issue \$100,000 of bonds to fund the floating debt and also \$75,000 of sidewalk, street and sewer bonds.

Tenn., Bristol.—W. D. Lyon, chairman of the Sullivan County Turnpike Commission, is quoted saying that bids will be received immediately for \$100,000 of 5 per cent. good-roads bonds, which is half of the issue authorized by the court recently.

Tenn., Charlotte.—T. R. Dickson, Clerk, says that a vote will be taken February 17 on the proposed issue of \$100,000 road bonds of Dickson county.

Tenn., Chattanooga.—A meeting of the County Court is called for January 16 to authorize \$250,000 of courthouse bonds and \$100,000 jail bonds. Joe V. Williams is Judge.

Tenn., Chattanooga.—The sale of the \$350,000 of courthouse bonds soon to be offered is reported guaranteed at par by citizens of Chattanooga. J. W. Williams is Judge.

Tenn., Chattanooga.—The First National Bank of Cleveland, O., it is announced, has purchased the \$4202.48 of Chattanooga (Chestnut St.) paying bonds at par, accrued interest and a premium of \$48.75.

Tenn., Gainsboro.—Official: Bids will be received until 2 P. M. March 16 for \$150,000 of 4½ per cent. 20-30-year Jackson county road bonds. G. Lee McGlasson is County Clerk; interest not over 4½ per cent.

Tenn., Gallatin.—Official: \$200,000 of 4½ per cent. good-roads bonds of Sumner county have been voted; denomination \$500. G. W. Boddie, chairman, is official in charge.

Tex., Austin.—A bond issue of \$100,000 for school buildings is reported in contemplation.

Tex., Austin.—The Attorney-General has approved bonds thus: \$55,000 5 per cent. 20-40-year Corpus Christi city hall and fire station; \$21,500 water and electric light; \$10,000 roads, bridges and streets; 5 per cent. 20-40-year Harlingen; \$5000 5 per cent. 40-year Spur school district; \$12,000 5 per cent. 20-year El Paso school district No. 16; \$2100 5 per cent. 20-year McCulloch county school district No. 15. The Harlingen issues were bought by J. Stanley Ford, City Secretary of that place. Additional approvals: \$12,000 of 5 per cent. 20-40-year sewer bonds of Forney, Tex.

Tex., Bay City.—Van Vleck school district is reported to have voted \$6000 of building bonds.

Tex., Bay City.—Official: Bids will be received on February 15 at the courthouse in Bay City for \$27,360 of 5 per cent. bonds, denomination \$1000, of drainage district No. 3 of Matagorda county. Price not less than par and interest. W. S. Holman is County Judge.

Tex., Beaumont.—Ordinances are approved and published for issues of bonds voted December 20 thus: \$60,000 park, \$30,000 sewer and \$60,000 street, all 5 per cent. 40-year; denomination \$1000 each. Emmett A. Fletcher is Mayor and J. G. Sutton City Secretary. The securities, after approval and registration, will be offered for sale at not less than par.

Tex., Celina.—Reported that \$8000 of sewer and \$6000 of street 5½ per cent. 10-40-year bonds have been purchased by J. B. Oldham of Dallas.

Tex., Corpus Christi.—The Council, it is said, will call an election within 60 days to vote on \$125,000 of street-paving bonds.

Tex., Corpus Christi.—It is proposed to issue \$150,000 of paving bonds.

Tex., Gall.—The \$50,000 of Borden county courthouse bonds were defeated January 6.

Tex., Hearne.—Uien & Co., Chicago, are reported to have purchased \$30,000 of water and \$5000 of electric-light 5 per cent. 20-40-year bonds.

Tex., Honey Grove.—S. H. Garlner, Mayor, will, according to press dispatches, receive bids at any time for \$5000 of 5 per cent. street-improvement bonds; denomination \$1000; dated July 1, 1911; maturity July 1, 1931, optional after July 1, 1931.

Tex., Houston.—A. C. Speer & Sons of Chicago are reported to have purchased \$3000 of school bonds of district No. 15, at Cedar Bayou, and the State Board of Education has bought \$3000 school bonds of district No. 23 at Post Oak school. Both sold at par.

Established 1888

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South and Water Sts., BALTIMORE, MD.
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TITLE DEPARTMENT examines and guarantees title to realty throughout Delaware.
REALTY DEPARTMENT has sites for manufacturing industries. Modern Methods of management of property.
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 J. ERNEST SMITH, V.-Pres. and Gen. Counsel.
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 Wm. S. Hammond, Cashier.
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 Specialists in Steam R. R. Securities
 Members New York Stock Exchange.
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CAPITAL AND SURPLUS - \$3,500,000

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Becomes Surety on bonds of every description.

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INTERESTS PAID ON DEPOSIT ACCOUNTS.

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Write for samples, prices and "The Blue Book of Rope Transmission"

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Largest Workers of Fibre in the World

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New York City

TRANSMISSION ROPE

Tex., Houston Heights.—It is announced that Sutherland & Co. of Kansas City and the Cutter-May Company of Chicago purchased the 5 per cent. Houston Heights paying bonds for \$180,000 through the Commercial Trust Co. of Kansas City.

Tex., Houston.—The Brunner School Board contemplates issuing \$30,000 of building and improvement bonds.

Tex., Jacksonville.—Reported that \$150,000 of road bonds of this (Cherokee) county have been sold to a Chicago firm.

Tex., Lewisville.—All bids are reported rejected for the \$75,000 of Lewisville road bonds of this (Denton) county, the commissioners demanding par and interest.

Tex., Markham.—Reported that the Markham drainage ditch bonds have been sold for \$234,990.13. They were voted last summer.

Tex., Mexia.—\$20,000 of road bonds are to be voted on February 17 in district No. 5 of Limestone county.

Tex., Nacogdoches.—Reported that an election for \$50,000 of street-improvement bonds will be called in February.

Tex., Raymondville.—Union Irrigation District is reported to have voted \$100,000 of canal bonds.

Tex., Richmond.—\$20,000 of high-school bonds are reported voted, and will be offered for sale. Prof. J. M. Patton may be addressed.

Tex., Rusk.—Official: Defeated: \$50,000 of Jacksonville precinct (Cherokee county) road bonds.

Tex., San Saba.—The Falls City Construction Co. of Louisville, Ky., is reported to have been awarded at par \$75,000 of 5 per cent. 10-40-year San Saba county courthouse bonds.

Tex., Silvertown.—The E. J. Holderness Construction Co., Stanford, Tex., according to press dispatches, has purchased at par \$25,900 of 5 per cent. 40-year independent school district building bonds.

Tex., Silvertown.—The Land Construction Co. is reported to have been awarded at par \$25,900 of 5 per cent. 40-year school-building bonds.

Tex., Troy.—\$20,000 of school-building bonds have been voted.

Tex., Van Horn.—Bids will be received at any time, it is reported, by Joe Irby, County Judge, for \$75,000 of 4 per cent. 10-40-year Culbertson county courthouse and jail bonds; denomination \$1000.

Va., Boydton.—Reported that this (Mecklenburg) county will receive bids until January 29 for \$240,000 of 5 per cent. road-improvement bonds.

Va., Harrisonburg.—The Board of Supervisors has asked the court to call an election for \$30,000 of roads bonds in Plains district of Rockingham county.

Va., Lawrenceville.—Official: Owing to some irregularity in ordinance regarding election recently held for bond issue for

water, light and sewer systems, the issuance of bonds in accordance therewith has been disapproved by attorneys to whom same was referred. D. S. Hicks, Jr., is Mayor.

Va., Richmond.—The finance committee of the Council has sold \$100,000 city bonds to the Sinking Fund Commission. They are part of the general issue of \$1,400,000.

At Morehead City, N. C., bids will be received until March 4 for \$15,000 of 5½ per cent. bonds. Further particulars will be found in the advertising columns.

At Galesboro, Tenn., bids will be received until 2 P. M. March 16 for \$150,000 of 20-

THIN STEEL KNIVES

for planing and surfacing lumber are being adopted by many of the largest and best mills in the country, as well as the smaller progressive mills. These knives are made from a special brand of steel, which in the old, heavy slotted fashion would be too costly to use. A thin blade, however, can be made of this special steel at a cost very little in excess of the ordinary machine knife.

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No. 56 Cedar St., NEW YORK

One Hundred-and-Seventeenth Semi-Annual Statement JANUARY, 1912

SUMMARY OF ASSETS.

	Par value.	Market value.
Cash in Banks and Trust Companies.....		\$1,791,025 14
United States Bonds.....	\$ 150,000 00	164,000 00
State and City Bonds.....	6,174,333 33	6,244,320 00
Railroad Bonds.....	8,885,000 00	8,427,900 00
Miscellaneous Bonds.....	1,133,000 00	1,024,160 00
Railroad Stocks.....	8,220,000 00	10,098,300 00
Miscellaneous Stocks.....	1,150,000 00	1,449,500 00
Bank and Trust Co. Stocks.....	159,300 00	467,680 00
Bonds and Mortgages, being first lien on Real Estate.....		38,300 00
Premiums uncollected, in course of transmission and in hands of Agents.....		2,227,326 81
Accrued interest.....		214,053 00
		\$32,146,564 95

LIABILITIES.

Cash Capital.....	\$3,000,000 00†
Reserve Premium Fund.....	11,798,635 00
Reserve for Losses.....	1,144,436 34
Reserve for Reinsurance and other claims.....	288,052 90
Reserve for Taxes.....	200,000 00
Reserve for Miscellaneous Accounts due and unpaid	100,000 00
Reserve as a Conflagration Surplus.....	1,800,000 00†
Surplus over contingencies and all liabilities, including capital.....	13,815,440 71†
	\$32,146,564 95

Surplus as regards policy-holders, - - - \$18,615,440 71†

DIRECTORS:

Levi P. Morton,	Emanuel H. A. Correa,
Elbridge G. Snow,	William D. Baldwin,
George H. Hartford,	Lewis L. Clarke,
Henry F. Noyes,	Clarence H. Kelsey,
Lucien C. Warner,	William Ives Washburn,
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John H. Flagler,	Thomas B. Kent.

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FREDERIC C. BUSWELL, Vice-President.
CLARENCE A. LUDLUM, Ass't Secretary.
AREUNAH M. BURTIS, Secretary.
CHARLES L. TYNER, Secretary.
HENRY J. FERRIS, Ass't Secretary.

New York, January 9, 1912.

20-year Jackson county road bonds; interest not to exceed 4½ per cent. Further particulars will be found in the advertising columns.

At Mountain Grove, Mo., bids will be received until February 12 for \$20,000 of 5 per cent. water-works bonds. Further particulars will be found in the advertising columns.

At Longview, Miss., bids will be received until 1 P. M. February 15 for \$10,000 of agricultural high-school bonds. Further particulars will be found in the advertising columns.

At Littleton, N. C., bids will be received until February 15 for \$10,000 of 6 per cent. electric-light bonds. Further particulars will be found in the advertising columns.

At Claxton, Ga., bids will again be asked for \$25,000 of 5 per cent. water and electric-light bonds, recent bids being rejected. Further particulars will be found in the advertising columns.

These Advertisements Too Late for Regular Alphabetical Index

Address "Astar," care Mfrs.
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Holman, W. S. 84
Harrison, J. A. 84
Kavanaugh, Wm. M. 84
Scott Brick Co., Alex. A. 43
Stamper, Ragland & Co. 84
The St. Charles 43
Treasury Department 84

At Bay City, Tex., bids will be received on February 15 for \$27,950 of 5 per cent. bonds of Matagorda county drainage district No. 2. Further particulars will be found in the advertising columns.

TIME-SAVING CUTTERS.

For many years, woodworkers have been making moldings by machinery. Some have done the work crudely, whereas others have had more or less success, but one and all recognized the need of a reliable system whereby the work could be reduced to a positive, inexpensive basis.

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The Shimer Reversible Cutters for single spindle Shapers, Variety Molders, etc., are carefully molded opposite to the shape to be produced in such a way as to have only the cutting edges touch the lumber. For Double Spindle Shapers these Cutters are made to run one way only.

These Cutters will be found to be complete, inexpensive, time-saving. They are manufactured from a grade of steel which holds an edge for a long time. Being always ready to slip on the machine, they will be found to be a great factor in maintaining standard grades, as well as a great help in filling orders promptly.

If you send blueprints or samples of your work to Samuel J. Shimer & Sons, Milton, Pa., they will make a careful estimate on Cutters that will soon pay for themselves by saving time and annoyance. (adv.)

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Contemplating the Establishment of Industrial Enterprises

Attention is called to the exceptionally favorable location of

NEWPORT NEWS, VA.

on Hampton Roads, fifteen miles from the Sea. Deep water, railway and sea transportation facilities unrivaled. Climate salubrious. Apply to

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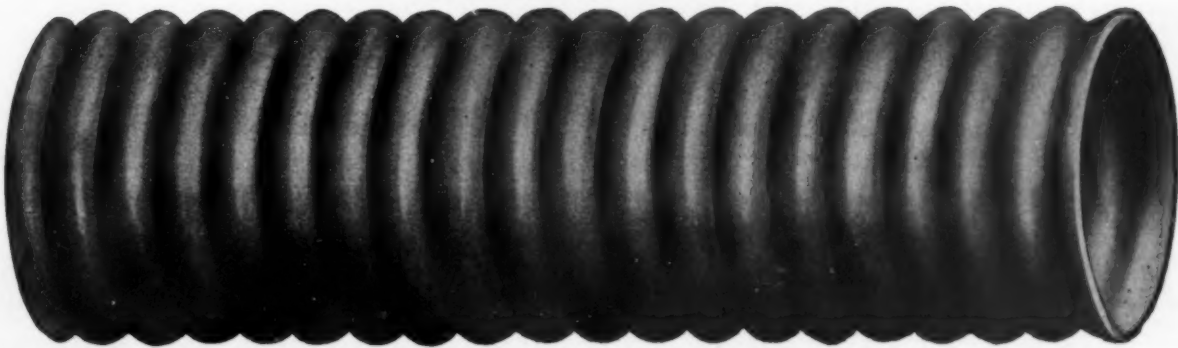


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Ten splendid efficient types, from a steel drag at \$8.50 up to the best made.

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It is permanent because it is concrete.

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Finished Dolarway Pavement.

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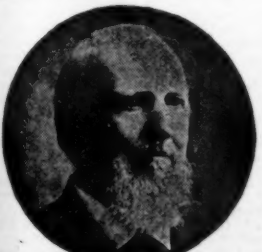
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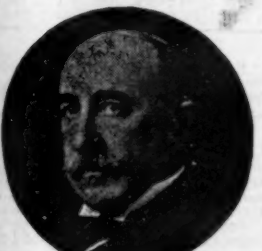
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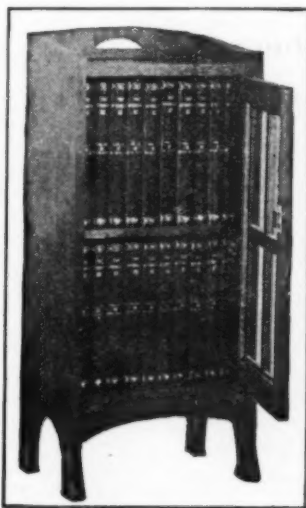
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A disinterested authority would consider many points in recommending an encyclopedia. Necessarily, it must be **authoritative and complete**—everything you want to know fully told—the salient facts. **AND MORE IMPORTANT**—the definitions must be so that you can understand them, so your children can understand them. Further, there must be proper balance and proportion—important subjects more completely covered than items of less general interest. An encyclopedia should simplify technical subjects—delineate the complex and abstruse, the involved and intricate, so that the reader who goes for **information** actually gets it. **THE ENCYCLOPEDIA AMERICANA** measures up to this standard. It is the **logical Encyclopedia**.

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Classified Opportunities

MEN WANTED

SALESMEN WANTED.—Traveling; salary and expenses or commission; must be active, ambitious and energetic; splendid opportunity; former experience not essential. Landmark Cigar Co., Denver, Pa.

AGENTS WANTED for Kotten Suction Cleaner, the only practical machine requiring no electricity; splendid opportunity; exclusive territory; liberal discount to right party. H. G. Kotten Co., 30 Church street, New York City.

WE WANT to employ someone to grade and build roads in our township that has the tools and stock to do the work. We have about fifty miles of road to build. We want to commence work March 1. A. E. Smith, Chairman Highway Commission, Mt. Airy Township, Mt. Airy, N. C.

HIGH-GRADE SALESMEN having acquaintance among large manufacturers will bring side line paying liberal commission; no samples required. Address "Allen," Box 663, Cincinnati, Ohio.

WANTED.—Capable man to take charge of mill-supply department that will be opened up by an electrical jobbing house. A man acquainted with the Southern and Western trade and their requirements preferred. In answering give references, state experience and salary expected. Address No. 934, care Manufacturers Record.

WANTED.—Traveling or local men; all sections of the country; profitable side line; commission or salary; good men average \$100 weekly. For particulars address The Sun Chemical Company, Richmond, Va.

AGENCIES WANTED

AGENCIES WANTED FOR EXPORT.—Manufacturers' agents in New York doing business with leading exporters desire one or two good agencies from manufacturers who wish to increase their foreign business. Address No. 914, care Manufacturers Record.

AGENCIES WANTED.—Energetic, wide-awake salesman, acquainted with all reputable architects, engineers, general contractors and firms handling building materials and building specialties in Louisiana and Southern Mississippi, desires to represent a few responsible firms on a strictly commission basis in Louisiana and in Mississippi south of the A. & Y. R. R. Address Salesman, P. O. Box 923, New Orleans, La.

SITUATIONS WANTED

SITUATION WANTED with established manufacturing company with view of taking interest in company to amount of \$5000 or \$10,000; have had 10 years' experience in manufacturing and jobbing business and am willing to start at moderate salary. Address No. 923, care Manufacturers Record.

WANTED.—Office, financial or managerial permanent connection with a good live concern, where the most stringent system of things necessary to success and to produce results in sales or production, including office, daily balances, audits and comparisons is needed; have a thorough knowledge of usages in business, banking, insurance, railroading and commercial law and the latest office systems. I can save my salary in economics. Address No. 931, care Manufacturers Record.

EDUCATIONAL

RENSSELAER POLYTECHNIC INSTITUTE, TROY, N. Y.—Courses in Civil, Mechanical and Electrical Engineering, and General Science, leading to the degrees of Civil Engineer (C.E.), Mechanical Engineer (M.E.), Electrical Engineer (E.E.), and Bachelor of Science (B.S.). Special courses in engineering and science. Splendidly equipped new engineering laboratories. Send for catalogues to Registrar.

BANKS

THE PALMETTO NATIONAL BANK, Columbia, S. C. capital \$250,000, solicits accounts of banks, firms, corporations and individuals, either commercial or savings accounts.

BUSINESS OPPORTUNITIES

COMPANY FORMING to market 23,000 acres, well adapted to citrus fruits and truck growing; good transportation; many beautiful lakes; want five associates to assist in floating. Box 867, Sanford, Florida.

RELIABLE, accurate and definite information regarding the possibilities for investment in high-grade land propositions in Mississippi and Louisiana; fourteen years' successful operation; references exchanged. Walter G. Hodges, Meridian, Miss.

MACHINERY MANUFACTURERS.—We have perfected a self-oiling pulley and friction clutch countershaft that is far superior to anything on the market; would like to make arrangement with some large manufacturer or capitalist to finance the manufacturing of these goods on a commercial basis; demand for product already established; highest endorsements; everything open to rigid investigation. Edward Wilbur, 125 Summer St., Boston, Mass.

Rate 20 cents per line per insertion. Minimum space accepted, four lines. Maximum space accepted, 24 lines. Allow seven words per line. Terms: Invariably cash with order; check, postoffice or express order or stamps accepted. No display type used. Questionable or undesirable advertisements will not be accepted. The assistance of our readers in excluding undesirable advertisements is requested. We reserve the right to refuse any advertisement. No patent medicine, whiskey or mining stock advertisements accepted. Rate for special contracts covering space used as desired within one year, as follows: 100 lines, 18c. per line; 300 lines 16c. per line; 500 lines or more, 15c. per line.

TO CORPORATIONS OPERATING IN TEXAS Under Permit.—You need an agent at Austin. I will attend to all your business with departments of the Texas State Government during this year for \$10. Address: W. R. Davis, Resident Agent, Box 317, Austin, Texas. Reference, Austin National Bank.

THREE INDUSTRIAL OPPORTUNITIES. \$200,000 telephone system and exchanges, Central Texas; pays 10 per cent. net income. A \$75,000 iron foundry and machine shop, North Texas city. A \$10,000 brick plant, trunk railway, North Texas. All above or either for trade for income property or land. H. H. Hyde, Central Bldg., San Antonio, Texas.

WE PROMOTE SUBDIVISION SALES.—If you own property in or close to a thriving city, cut it up in town lots and let us sell them by our red tag plan. They sell like hot cakes. Tom Magruder, Mgr., Moberly, Mo.

TO A PRACTICAL HANDLE MAN, who is well recommended, we will sell on such easy terms that he can pay for it from the earnings of the plant, an up-to-date plant for making hickory tool handles, singletrees, neckyokes, broom handles; well equipped with an abundant supply of available timber. Address No. 890, care Manufacturers Record.

WE PROMOTE TOWN LOT SALES.—Land owners adjoining thriving cities, cut your acreage up into town lots, employ us to conduct a red-tag sale. We'll take the lots to the mint and coin them into money for you. Owners, write for particulars. F. J. Raymond Realty Co., Evansville, Ind.

TOURIST HOTEL WANTED

TOURIST HOTEL WANTED AT SAVANNAH, GEORGIA. We have the ideal location; 10 acres on electric car line, near yacht club; has beautiful trees, artesian water and salt-water riparian rights. Bernard & Waters, Box 92, Savannah, Ga.

WINTER HOMES FOR SALE

FLORIDA winter home and celery farm, 10 acres, subterranean, facing St. Johns River; finest fishing and shooting; beautiful bungalow, surrounded by orange trees. Address Cecil Gabbett, Sanford, Florida.

BEAUTIFUL HOME IN APOPKA MOUNTAIN REGION OF FLORIDA.—Six-room bungalow with modern improvements, located in and including solid block tree and one-half (3%) acres finest orange and grapefruit trees. Block in center small town, surrounded by finest lakes in Florida; healthiest section in State. Fine fishing, boating and hunting. Trees alone worth \$5000, in addition to value of building and 20 lots 50x150. Price \$6500. D. C. Moriarty, Clermont, Fla.

MAPS AND BLUE PRINTS

MAPS OF TEXAS COUNTIES.—We make blueprint maps of nearly all Texas counties and several Louisiana parishes. Write for prices on these desired. Singleton Bryan & Co., Beaumont, Texas.

TYPEWRITERS

IF YOU are interested in purchasing a high-grade typewriter and do not care to invest \$100 asked by the manufacturers, we would like you to investigate our remanufactured machines. Three days' trial allowed. Enterprise Exchange, Inc., 609 E. Baltimore street, Baltimore, Md.

ICE MACHINES

WANTED.—To correspond with parties desiring or contemplating installing absorption ice machines manufactured by Columbus Iron Works. Consolidated Ice & Power Co., Valdosta, Ga.

INDUSTRIES WANTED

SYRUP REFINERY AND SWEET POTATO CANNERY

JACKSON, MISS. invites correspondence from any thoroughly competent person or persons who understand the business, who would be interested in coming here and erecting and managing a syrup refinery and sweet-potato cannery, the same power for both, if Jackson will give a fine site and substantial bonus. Reply to Jackson Board of Trade.

MISCELLANEOUS

VICTORIA, TEXAS, head of navigation of Guadalupe River; center of cotton, corn, truck and citrus fruit-growing district of South Texas; country rapidly developing; opportunities for many industries. If interested in the coastal section of Texas, write for booklet "D" to the Secretary of the Progressive League.

ARE you looking for a good factory site? We have a growing town with good railroad facilities and offer splendid inducements. Address W. D. Welsh, Mayor, Kentwood, La.

LAREDO, TEXAS, wants a tourist hotel, cement factory, up-to-date educational institution, down-the-river railroad. Laredo has best coal Texas, natural gas, equable climate, abundant water, labor. In citrus fruit district. Address Board Trade.

SUFFOLK.—The best manufacturing and distributing point in Virginia; six railroads and water transportation; plenty of labor; cheap fuel; electric power; seventy manufacturing plants in successful operation; opportunity for furniture and woodworking plants and any wholesale jobbing or manufacturing business; center of tidewater; richest farming section to be found; healthy; excellent schools and churches; filtered water, gas and sewer. Write Board of Trade, Suffolk, Va.

CLEVELAND, TENN., WANTS YOU.—The best town in the Southeast, with a hydroelectric development of 32,000 initial horsepower for manufacturing purposes, final development 82,000 horsepower. Free manufacturing sites; exemption from city and county taxes; ample railroad facilities; spring water pumped to all parts of the city; cheap raw materials; 185 miles of pike roads in country; fine farming and trucking section; best of public utilities; cheap white labor; cheap power; ideal location for cotton mill, furniture factory and brick-manufacturing plant; good climate; most rapidly developing city in the Southeast. Write Commercial Club, Cleveland, Tennessee.

WANTED.—Asheville, N. C., 31,000 population, including suburbs; 38 miles paved streets; best water on earth; men with capital to invest in money-making enterprises; good opening for manufacturing enterprises. Write Board of Trade.

INDUSTRIAL PLANTS FOR SALE

FACTORY BUILDINGS

FACTORY BUILDING FOR SALE.—Two-story brick concrete building; best drydock in Oklahoma; warehouse, brick paint or dipping room; truckage suitable for woodwork of any kind. Write for particulars. W. J. Finch, El Reno, Okla.

FOR LEASE OR SALE ON EASY TERMS. Two-story brick factory building, 200x60 feet, with ell, giving total floor space 30,000 square feet, with power, light, heat and water, automatic sprinkling system, 150 H. P. Corliss engine and two boilers.

Site 38x330 feet, within corporate limits; abundant help nearby; accessible to electric cars, railroads and steamboat lines. Barton Myers, Norfolk, Va.

FURNITURE AND WOODWORKING PLANT

\$40,000.—COMPLETE new furniture, show-case and woodworking plant on sidings of two railway systems, Texas town of 6500 people; good market; material convenient; water free; fuel inexpensive; thoroughly modern plant, ready for immediate operation. Oliver & Remy, San Marcos, Texas.

HANDLE AND SINGLETREE PLANT

FOR SALE.—Handle and singletree plant, well equipped, where there is an abundance of available timber to last for many years. Address No. 900, care Manufacturers Record.

PLANING MILL PLANT

FOR SALE OR LEASE AT HOUSTON, TEXAS.—A complete planing-mill plant, including buildings and ample ground for yards, located on two railroad tracks and convenient to the city; an excellent site for milling in transit. For particulars address H. C. House, Houston, Tex.

ELECTRIC LIGHT PLANT

FOR SALE AT A BARGAIN.—Complete equipment of an electric-light plant, consisting of one 14x36 mill type Murray Corliss engine, 2 35 H. P. Atlas tubular boilers, 1 Gem City heater, 3 boiler-feed pumps, smokestacks and settings, 1 90 K. W. single-phase A. C. generator, skeleton switchboard and instruments. Will sell all or any part. For prices and description address City Light and Water Plant, Coleman, Texas.

MINERAL AND TIMBER LANDS, WATER POWERS AND MISCELLANEOUS PROPERTIES

FOR SALE.—About 6500 acres of coal, several seams from four to eight feet, of which there is about 2727 acres in fee simple; 3000 acres of oil and gas; nearly 3000 acres of valuable timber; gas and oil have been struck almost on the boundary of this property. The Guyan Valley Railroad runs through this tract, and rights of way have been secured by another railroad also through this tract. Located in Logan county, West Virginia. William Gest, 337 Society for Savings Building, Cleveland, Ohio.

WRITE for list New Orleans residence lots and factory sites; Louisiana mineral, timber, cut-over and farm lands. Orient Co., Ltd., 515 Audubon Bldg., New Orleans, Louisiana.

NORTH CAROLINA.—Rich and extensive deposits of fine quality corundum and alundine garnet (inexhaustible in quantity) for sale by Henry Scharffetter, 217 St. Paul St., Baltimore, Md.

FACTORY SITES. Business Property, Residences and Farms. If interested in the metropolis of the Southwest or its territory, write for free land list and booklet on Houston, Texas (where 17 railroads meet the sea), or make your wants known. Bank references if desired. Central Land Co., 303 Theater Bldg., Houston, Texas.

SALT—SULPHUR—FULLER'S EARTH PROPOSITION.—We own and control extensive tracts of land in East Texas, on which we have found rock salt, deposit of sulphur and fuller's earth. We desire to correspond with parties interested who would develop these holdings upon a business basis. We would sell or lease. Address Wolpert Grocery Co., Tyler, Texas.

FOR SALE.—Boundary of 256,000 acres in State of Durango, Mexico; good ranch, mineral and timber land; contains 500,000,000 feet yellow pine; railway building within 25 miles of lands; 25-mile tramway to new railway can be built at small cost; 100 miles to Pacific port of entry by rail, for ship-loading for use of Panama Canal route and for all American and European shipping markets. We control and can deliver promptly this valuable boundary for \$2.50 per acre; one-fourth down; one, two and three years for balance. Principals only need reply. Address for particulars, J. C. Lindley, Greensboro, N. C.

MINERAL LAND FOR SALE containing long and short fiber asbestos in small and large veins and pockets; about 20 outcroppings prospected 6 to 18 feet deep. Graphite in four forms, crystalline, flake or hard, earthy and graphite quartz vein four feet wide, assaying 5 to 6 per cent. pure graphite. Large talc vein, also large quantity of low-grade talc. Large amount kaolin and yellow ochre, corundum and nickel ore in two places. These minerals cover about 70 or 80 acres. Location, five miles west of Chipley, Ga., on county line, and five miles from railroad. For further particulars address G. I. Bryan, Chipley, Ga.

ONLY QUARRIES

FOR SALE OR LEASE.—Onyx quarries; extensive deposits; beautiful and translucent quality; several varieties of color; weather conditions for quarrying favorable year round; quarried in large and long blocks; convenient to transportation; practically a monopoly. B. W. Torrance, 509 Candler Building, Atlanta, Ga.

COAL MINE FOR SALE

FOR SALE.—Coal mine, equipped; store postoffice, 14 houses; on C. & O. Ry. Great opportunity now for a practical man with small capital. Graham Coal & Realty Co., Charleston, W. Va.

COAL LANDS FOR SALE

VALUABLE COAL TRACT FOR SALE.—A 4500-acre tract of coal land, located in East Tennessee, containing six workable surface veins of high-grade coal, suitable for steam, domestic and coking purposes, besides several excellent workable veins under the surface. The property is now within four miles of a railroad, and a charter for a new railroad has recently been taken out, the proposed route being through the center of this property. There is between 12,000,000 and 15,000,000 feet of merchantable hardwoods on the tract that can be cut and marketed at a handsome profit just as soon as this new road is completed. The price on the property is \$45 per acre, all cash, or \$50 per acre on terms. Blueprints and engineer's report will be furnished genuine buyers who can show financial ability to purchase such a property. Correspondence solicited with principals only; no agents. Address Albert F. Lee, 216 Sixth Ave., Nashville, Tenn.

TIMBER LAND FOR SALE

FOR SALE.—2200 acres of timber land in Liberty county, Georgia, located one-half mile from Ludowika, known in the Clerk's office of the said county as the Charles Tutty estate, R. O. Tutty, executor. About 1000 acres of this timber has not been timbered for 55 years; 1000 acres are now virgin turpentine. The Atlantic Coast Line runs through this tract of land. For terms and particulars apply to the Laborers & Mechanics' Realty Co., Inc., sole agents, 2006 11th St. N. W., Washington, D. C.

TIMBER FOR SALE

FOR SALE.—40,000,000 feet of first-class hardwood and cypress, situated right on a railroad. Apply to E. J. Iles, Alexandria, La.

CUT-OVER TIMBER LANDS

CUT-OVER TIMBER TRACTS.
50,000 acres cut-over pine lands, Miss. \$4.50
20,000 acres cut-over pine lands, La. 3.00
75,000 acres cut-over pine lands, Tex. 3.00
18,000 acres cut-over hardwoods, La. 4.50
Marsh Lands for Reclamation.
60,000 acres in a body, Gulf Coast of La. 2.00
Timber Lands.
20,000 acres L. L. Y. pine, Fla., cut 2500 ft. 1.00
15,000 acres L. L. Y. pine, Ala., cut 7000 ft. 2.00
30,000 acres hard wood, cut 10,000 ft. (60%) red gum) 10.00
Finest red gum proposition South.
Wm. R. Taylor, 508 Perrin Bldg., New Orleans, La.

Classified Opportunities

10,730 ACRES Louisiana hardwood timber lands, 104,000,000 ft. on Sabine River, 15 acre. 30,000 acres rich dark bottom cut-over hardwood, S. W. Arkansas, lands on Ry., 36 acre. 35,000 acres Louisiana cut-over lands, 35 acre. Robert Sessions, Winthrop, Ark.

FARM AND TIMBER LANDS

640 ACRES LAND IN FEE SIMPLE, located in North Alabama, unimproved, but has fine lot of hardwood timber—oak, hickory and poplar. Price \$7.50 per acre. Timber worth the money. M. F. Webb Real Estate Company, 201 Jefferson County Bank Bldg., Birmingham, Alabama.

FARM AND TIMBER LANDS.—We have attractive offerings in farm, yellow pine and hardwood timber lands. We also handle coal and ore properties. Correspondence from interested parties invited. Provident Trust & Security Co., Land Dept., Walton Bldg., Atlanta, Ga.

I HAVE BARGAINS IN TIMBER TRACTS, large colonization propositions, cut-over lands and reclamation tracts in any size wanted up to 150,000 acres from \$2.50 per acre up.

Wm. R. Taylor, Land and Timber Investments, 508 Perin Building, New Orleans, La. Established 1893. Sales over \$5,000,000.

AN EXTRAORDINARY BARGAIN—Bastrop County, Texas, Timbered Agricultural Land—8000 acres, lying 13 miles from county seat, Bastrop, fully 75 per cent. agricultural land, adapted for all fruits, vegetables, cotton, corn, tobacco, reddish sandy loam, clay soil, 42-inch rainfall. This tract will be sold with a guarantee that it will scale 10,000,000 feet of pine timber and 50,000 cords of wood, which is easily marketable on account of the proximity to railroad. Timber and wood will more than pay for the land and would make an ideal colonization proposition; four producing coal mines within five miles of this tract; productive farms on all sides. For quick sale owners offer this at \$7 per acre on extremely liberal terms. N. H. Lowry, Austin, Texas.

ARKANSAS hardwood timber tracts; in touch with owners; have some bargains. Yellow cotton colonization proposition, 15,000 acres, at \$5; timber enough to pay out. Fredrick Realty Company, Springdale, Ark.

COLONIZATION LANDS

11,000 ACRES fine agricultural land, including an entire town of some 50 dwellings and much more assets. Price \$8.50. Vestal & Haygood, Arkadelphia, Ark.

PLANTATIONS FOR SALE

3555 ACRES of good hill cotton land for sale; now in successful operation; well supplied with negro labor. The plantation lies between two branches of the Illinois Central Railroad; nearest shipping point, four miles from the dwelling. The land corners within half mile of one of the shipping points. A sufficiency of cabins for tenants, stables, crib, cotton pens and all outhouses. Forty-five head of mules and horses, cows, farming implements and feedstuff. Price very low. Terms good. Address A. C. Leigh, Grenada, Miss., bona-fide owner of the property.

FARMING LANDS

WE OWN and offer for sale on easy terms more than 100,000 acres of farming lands in Louisiana and Mississippi. Anyone interested in Southern investments should write us direct and save the middleman's profit. The Lampton Realty Co., 405 Hibernia Bank Building, New Orleans, Louisiana.

FARM AND RANCH LANDS

90,000 acres Durango,	price \$1.75 per acre
80,000 acres Coahuila,	price 2.25 per acre
30,253 acres Chihuahua,	price 3.00 per acre
100,000 acres Sonora,	price 3.00 per acre
375,200 acres Durango,	price 3.00 per acre
162,783 acres Chihuahua,	price 2.00 per acre
135,147 acres Durango,	price 3.00 per acre
230,000 acres Coahuila,	price 1.50 per acre
28,000 acres Chihuahua,	price 2.50 per acre
150,000 acres Chihuahua,	price 2.50 per acre
405,000 acres Chihuahua,	price 2.00 per acre
30,590 acres Tamaulipas,	price 1.50 per acre
30,590 acres Chihuahua,	price 1.50 per acre
28,000 acres Chihuahua,	price 2.50 per acre
103,255 acres Tamaulipas,	price 2.25 per acre
179,648 acres Tamaulipas,	price 2.25 per acre
80,260 acres Coahuila,	price 2.75 per acre
1,115,640 acres Tamaulipas,	price 2.50 per acre
1,336,365 acres Sonora,	price .75 per acre
191,000 acres Sonora,	price .75 per acre
80,000 acres Durango,	price 4.50 per acre
200,000 acres Durango,	price 2.00 per acre
100,000 acres Sonora,	price 5.50 per acre

Cass & Fry, 30 City National Bank Building, El Paso, Texas.

PECAN ORCHARDS

BUY A FIVE-ACRE PECAN ORCHARD in Alabama, "The Land of Plenty." I have fifty tracts of five acres each admirably adapted to this profitable crop. I manage tracts for non-resident owners if preferred, and can furnish best of references. Investigation invited. Write for full information and terms. Oscar V. Case, Fort Payne, Ala.

VALDOSTA, GEORGIA, PECAN PLANTATIONS.—Pecan culture offers largest returns; five-acre tract on easy payments assures a steady growing income; we take care of orchards for four years; 800 acres under cultivation in budded paper-shell pecans. Write for booklet. South Georgia Real Estate & Development Co., Valdosta, Ga.

APPLE ORCHARDS

40-ACRE APPLE FARM; 20,000 bearing trees; yearly profit \$15,000; located in Arkansas apple belt; \$30 per acre for short time. Vestal & Haygood, Arkadelphia, Ark.

CABBAGE PLANTS

AN ACRE OF CABBAGES near a town or village will net over two hundred dollars. We have twenty-five acres in cabbage plants of all improved varieties, grown in the open air, and are positively frostproof. Will make large heads. Price, 1000 to 5000, \$1.25 per thousand. Special prices over 5000. Packed in neat boxes and tied in bunches if desired. Special express rates. The Sea Island Plant & Seed Co., Meggetts, S. C.

ORANGE GROVE

FLORIDA ORANGE GROVE.—Forty acres, 500 trees, 7-room house, on beautiful lake, near live town; good trucking land. This place sold several years ago for \$10,000. On account of death of owner we offer for immediate sale at \$7500, half cash. This property can be made to pay well and is a big bargain. King & King, Jacksonville, Fla.

FARM, FRUIT AND TRUCK LANDS

ALABAMA

5000 ACRES rich level black prairie land for sale, at Catherine, Wilcox county, Ala. Maps sent on request. B. S. Bibb & Co., Selma, Ala.

FOR A HOME OR FOR INVESTMENT let us write you interestingly of more than 400,000 acres of desirable land which we have for sale at wonderfully low prices in Alabama. Any location, large or small farm, pasture and fruit lands. Picking out bargains throughout the State is our daily business. Alabama State Agricultural Land Co., Center, Ala.

ARKANSAS

10,000 ACRES unimproved land; good general farming, all level, well located to railroads, schools and churches; good soil. Price \$6 per acre. J. D. Reynolds, Camden, Ark.

FOR SALE.—The best land for the least money in the State of Arkansas can be had in Perry county; any size tracts; improved or unimproved; prices \$5 to \$12.50 per acre. For particulars write J. W. Cook Land Co., Perry, Ark.

CUBA

SPLENDID TRACT, timber, crosties, water-power, colonies, fruit, coffee, chocolate, stock; finest soil, climate, health, transportation; \$6.40 per acre. J. O. Andrews, Gainesville, Fla.

FLORIDA

FOR SALE.—320 acres of good muck land, clay subsoil, good truck land or for hog or stock farm; 17 miles from Jacksonville; only \$10.50 acre. By owner, A. E. Reid, 206 Bishbee Building, Jacksonville, Fla.

WHY PALMETTO LEADS.—The 800,000 acres of fruits and early vegetables attests the superiority of soil, climate and irrigation necessary to produce such crops. The ease with which such crops are handled by rail and water make it an ideal place for fruit and vegetable growing. The Manatee River, Terra Cina and Tampa bays furnish ideal salt-water fishing, boating and bathing. For further information address The Manatee River Board of Trade, Palmetto, Florida.

FLORIDA FARMS ARE FORTUNES.—Our soil similar to fertile sections Iowa, Missouri; easy-payment plan. Write for booklet. Milton Land & Investment Co., Marianna, Fla.

FLORIDA FRUIT AND TRUCK LANDS.—We offer 10-acre tracts in that part of the State of Florida lying in Hillsboro county and Lake Butler region, in the Pinellas peninsula, on the west coast of Florida, on the Gulf of Mexico; with its elevation and rolling hills is especially suited for fruits of all kinds—grapefruit, oranges, grapes, dates, figs, bananas, peaches and other fruits, as well as vegetables, potatoes, corn, beans, peanuts and all the varieties that can be produced anywhere. The Tarpon Springs district offers the most favorable conditions for farmer, home seeker and investor. Fertile lands in small tracts, easy monthly payments; guaranteed title. Investigation invited. If you want a bargain and a home in the most desirable part of Florida, write now for particulars and reservation. Tampa & Tarpon Springs Land Co., Tampa, Florida.

LOUISIANA

HEADQUARTERS FOR NORTH LOUISIANA LANDS.—Large and small tracts, suitable for plantations, small farms, orchards or truck gardens. Climate, soil and health conditions here are unsurpassed. The staple crops of the North grow in this section alongside of cotton and cane. A great stock country. Write for particulars, stating your requirements. References, my customers and any bank in Shreveport. W. A. Jones, Authority on North Louisiana Lands, Shreveport, La.

FORTY-ACRE TRUCK FARMS for sale in the famous strawberry belt of Louisiana on main line of Illinois Central Railroad. Price \$25 per acre on easy terms. Similar lands only a few miles distant are selling as high as \$75 per acre. The Lampton Realty Co., 405 Hibernia Bank Building, New Orleans, Louisiana.

LOUISIANA LANDS.—We make a specialty of improved farm lands and on application will mail free list giving price and description of more than a hundred tracts, from 13 acres to 2400 acres. Also write us for hardwood, cut-over and colonization propositions from 1000 to 60,000 acres. Grace Realty Co., Plaquemine, La.

MISSISSIPPI

FORTY-ACRE FARMS in George county, Mississippi, 35 miles northwest of Mobile. This is one of the most-favored general farming sections of the entire South, and no better values can be found anywhere. Price \$25 per acre on easy terms. The Lampton Realty Co., 405 Hibernia Bank Building, New Orleans, Louisiana.

NORTH CAROLINA

WANTED.—Men to become independent farmers in Eastern North Carolina, the "Nation's Garden Spot." Leads for large profits on small capital. Write for booklet. C. Van Leuven, 815 Southern Bldg., Wilmington, N. C.

WESTERN NORTH CAROLINA ORCHARD AND STOCK FARM.—113 acres; 85 in fine oak and poplar timber; rest open land; two-room dwelling and splendid garden; good apple and cherry orchard; half dozen springs on place; one-quarter mile public school and State road; four churches in one mile; thickly-settled community; excellent people; ideal Southern climate; on top of Blue Ridge Mountain in the great health resort and fruit-growing section of Western North Carolina, two miles from the famous Roaring Gap Hotel. The Elkin & Alleghany Railroad is building near property; now running trains in seven miles of place. The timber on property is worth double price asked. Price only \$1500, all cash. Southern Home-seekers' Bureau, Wilkesboro, N. C.

TEXAS

FOR SALE.—235½ acres prairie land, located on Santa Fe Railroad and on public road (shelled) only 13 miles from Beaumont and one-quarter mile from Fannett; suitable for general farming or for subdividing into smaller tracts. Title perfect. Price \$27.50 per acre. Also other lands suitable for subdivision. Texas Realty Co., Beaumont, Texas.

264-ACRE FARM on Lavaca River, 5 miles north of Edna, Texas; 600 acres river bottom field; 10 small rent houses; one 10-room ranch house; private phone line out of Edna; all fenced; several wells; 3000 bearing pecan trees; will sell or trade for good city property at \$35 per acre. Emil Locke, 712 Gibbs Bldg., San Antonio, Texas.

THE BLACK LANDS OF NORTH TEXAS are justly famous as the best in the world for the production of cotton, corn, wheat and oats—not one crop, but four. Once Goodwin's Denton Creek Subdivision consists of more than 8000 acres of this land, situated on the Denton and Wise county line, 50 miles northwest of Dallas, and is offered at reasonable prices—thirty to forty dollars per acre—and upon such terms that any man with a few hundred dollars cash can easily meet. The gradual and steady enhancement in value of such land should appeal to investors, while the very easy terms upon which it is offered should appeal to the farmer without a home. Address Fount Ray, Deatur, Texas.

TEXAS COAST COUNTRY BARGAIN.—8000 acres fruit and general farm land surrounding a railroad station at small towns 55 miles from city; 600 acres now in cultivation; only \$12 per acre; terms if desired. C. H. Stancliff Land Co., Houston, Texas.

ORANGE LAND.—Texas gulf coast orange, fig and garden farms; \$15 down and \$15 per month; black loam prairie; good roads, schools, churches and markets; between Houston and Galveston. Send for illustrated literature. Agents wanted. L. Bryan & Co., Houston, Texas.

RICHEST FARM AND FRUIT LANDS. IN FAMED BEE COUNTY, 40 MILES FROM GULF, IN THE RAIN BELT.—Old Wilson ranch, 18,700 acres, in small tracts, 40 to 640 acres, each facing roadway; close to railroad; good automobile roads; finest black sandy loam; clay subsoil; no rock; practically no waste land; gently undulating; perfect drainage; good water; coming truck and citrus fruit section; can raise winter vegetables, then plant cotton or corn; climate balmy and healthy; gulf breeze makes summer nights delightful; no malaria nor mosquitoes; extensive development going on. Write for booklet. Low price; easy terms. If wanted, will sell 5000 or 9000 acres in a solid block at especially attractive figure. Theodore Plummer, Owner, 540 Moore Bldg., San Antonio, Texas.

WELL-IMPROVED FARM FOR SALE.—500 acres, adjoining and same quality as land described next above; 300 acres in cultivation, all fenced and cross-fenced; excellent farm improvements; best in that section of country; ideal Southern home. For quick sale at low price. Terms, 1 to 5 years. Write for full particulars. Theodore Plummer, Owner, 540 Moore Bldg., San Antonio, Texas.

10,000 ACRES Nueces River bottom land; all subdivided into small tracts; very best truck and fruit land in Southwest Texas; will sell in small tracts or in a body. Emil Locke, 712 Gibbs Bldg., San Antonio, Texas.

THREE TEN-ACRE TRACTS, one two-room, one three-room house, all in cultivation, under co-operative irrigation system from Rio Grande River; water at cost; land joins McAllen, but not in corporation; McAllen, for several reasons, is best town in Rio Grande Valley; fine climate; good drinking water from wells. Will sell all or part of land cheap for cash; \$275 to \$350 per acre if sold soon. Address owner, A. Renken, McAllen, Tex.

COTTON AND CORN LAND.—12,680 acres, near two good railroads, being one mile from one and two miles from the other; splendid colonization tract; at \$10 per acre; one-fourth cash; balance 6 per cent. Address owner, Dr. C. S. Preston, 1007 Scanlan Bldg., Houston, Texas.

JAS. GOODE REAL ESTATE CO., ranch and irrigated lands. Office, Orient Hotel, Pecos, Tex.

SACRIFICED.—\$30 per acre buys 320 acres irrigable land near Pecos, Texas. Adjoining land bringing \$10 more. Climate unexcelled; unsurpassed transportation facilities; great opportunity for investor. Land values increasing with astonishing rapidity. This land will bring \$100 before 1920. Investigate this fully. It will pay you. I must sell or I would hold for and get \$100 in next five years. Address J. R. Hobbs, Shelbyville, Tenn.

IRRIGATED LANDS.—Parties in the North, East and Middle West interested in improved and unimproved irrigated lands and ranch property in the great Pecos section, communicate with us. Pawkett & Davis, Pecos, Tex.

THE FRIO VALLEY WINTER GARDENS, La Salle county, Southwest Texas, a colony of 100,000 acres level rich black sandy loam in famous artesian belt; grow oranges, figs, Bermuda onions. We are opening Fowlerston, a new town on new railroad in heart of the colony. Guaranteed improvements on town-site. A 10-acre farm and free residence lot on terms of \$15 cash; balance \$10 monthly. Write for booklet A, prices, plans, etc. Fowler Brothers Land Co., Frost Building, San Antonio, Texas.

WEST VIRGINIA

FOR SALE.—1002 ACRES WEST VIRGINIA APPLE LAND.—This property is located six miles from Berkeley Springs, Morgan county, West Virginia, and is about four miles from the railroad at Great Cacapon. There are ample cold-storage facilities available at Berkeley Springs, six miles from the property. This property is good for apples and is in a famous apple section. Many of the large orchards where fine fruit are grown are near this land. There is 300 acres of bottom land, and 50 acres of same is cleared; balance is in timber. Most of the land is available for horticulture, and ideal orchard sites abound. The soil is especially rich and productive. It is well watered, and water can be carried to all parts of the tract with pipes for purposes of gravity spraying. The owner agrees to have this land surveyed and sell the same on the basis of \$12.00 an acre for whatever the survey shows. Address West Virginia Tri-Products Company, Morgantown, W. Va. Howard L. Swisher, Pres.

MACHINERY AND SUPPLIES

WANTED.—Every consumer in the Southwest to know that the Texas Rolling Mill Company of Fort Worth, Texas, manufactures track spikes, track bolts, machine bolts and nuts; also standard sizes of bar iron. One hundred tons always in stock. From shipments our specialty. Satisfaction guaranteed.

FINANCIAL

8 PER CENT. 5-YEAR OKLAHOMA FARM MORTGAGES.—Yes, rate is high, but sure and easily paid; conditions warrant it, and you get benefit; lands cheap, rich; values doubling; 25 years' experience in Southwest; 10 years bank cashier here; know people, lands, laws, resources, local conditions; never lost a mortgage nor had a title contested; abundant references; circular; investigate. J. G. James, Roff, Oklahoma.

8% PREFERRED STOCK, free of taxes, backed by real estate in a progressive city, for sale in amounts from \$100 to \$15,000. Will bear close investigation. For particulars address Box 148, Charlotte, N. C.

\$1,000,000 OF 6% BONDS, secured by first mortgage on productive real estate, minimum value of which is eight to ten times the face of bonds. Proceeds to be used for further improvements. Property situated in one of the most resourceful and rapidly developing districts in the Southwest. Would sell all or a part of issue. Responsible parties only. Address J. Farley, care of Manufacturers Record, Baltimore.

PATENT ATTORNEYS

EUGENE C. BROWN, ENGINEER and Patent Lawyer, Suite 40 Victor Bldg., Washington, D. C., Member Bar U. S. Supreme Court. Patents and Trademarks; Patent Suits for Infringement. Mr. Brown is especially qualified to prosecute cases in Patent Office and patent litigation from both Engineering and Legal standpoints, having been Examiner in U. S. Patent Office for nine years. Send sketch for advice.

IDEAS WANTED.—Manufacturers are writing for patents procured through me. Send for free 72-page guide and "Stepping Stones" (containing over 200 inventions wanted). Personal services. Clients' patents sold free. Trade-marks registered. R. B. Owen, Dept. 12, Washington, D. C.

Classified Opportunities

PATENT ATTORNEYS

PATENT YOUR IDEAS.—\$100,000 offered for one invention, \$5000 for another; book, "How to Obtain a Patent" and "What to Invent," sent free; send rough sketch for free report as to patentability; patent obtained or fee returned. We advertise your patent for sale at our expense. Chandler & Chandler, patent attorneys, 978 F street, Washington, D. C.

PATENTS Secured or Fee Returned. Send sketch for free report as to patentability. Guide book and what to invent, with valuable list of inventions wanted, sent free; \$1,000,000 offered for one invention; \$10,000 for others. Patents secured by us advertised free in World's Progress; sample free. Victor J. Evans & Co., Washington, D. C.

PATENTS FOR SALE

WE HAVE recently secured the following patents. Address all communications to Sales Dept., Victor J. Evans & Co., Washington, D. C.: Jos. Peart, rake; Fred Post, forceps; Chas. Wainwright, valve; M. H. Eiston and A. C. Pitman, rotary motor; Frederick Vincent, window-pane fastener; D. Williams, light attachment for music stand; Peter Sorenson and Edw. N. Gilstrap, release for buggy; Robert J. and James G. Haskel, flying machine; Joel B. Dumas, steam turbine locomotive; M. W. Forman, safety device for railways; S. D. Forman, wheel brake; J. S. Fox, track railway rail; Robert L. Gaylord, sectional honey tray; John Holtzman, safety cock; Robert G. Jagers, wire clamping stretchers; John McP. Cooke, gauge attachment for bottomhole machine; C. O. Melick, squares and protractors; C. H. Mickelsen, vehicle; H. M. Parker, tilting machine; Clyde R. Zuver, pitmen; E. W. Purves, safety hoisting hook; Mike Perpick, box-lid fastener; J. Lloyd Prunty, smoking pipe; J. S. Williamson, can opener.

ing machine; Clyde R. Zuver, pitmen; E. W. Purves, safety hoisting hook; Mike Perpick, box-lid fastener; J. Lloyd Prunty, smoking pipe; J. S. Williamson, can opener.

Contractors' Equipment FOR SALE

The following equipment, now at work, for delivery in six or eight weeks:
One Ingersoll-Sargent Class A Compressor, 16"x16"x18", capacity 498 cu. ft., complete, with receiver. One No. 1 Smith Mixer, Steam Engine and Boiler on trucks. One 1/2-yd. Ransome Mixer, Steam Engine and Boiler on trucks. One 40 H. P. Locomotive Type Boiler. One 30 H. P. Vertical Boiler. One No. 4 Champion Jaw Crusher, Engine and Boiler on trucks.

STAMPER, RAGLAND & CO.,
Richmond, Va.

ROOFING SALESMAN WANTED

WANTED—A competent Roofing Salesman widely acquainted in Southern and Southwestern territories and thoroughly familiar with the sale of Asphalt Roofings and Coal Tar Products. Inexperienced applicants are not desired.

Address, "ASTAR"

Care of Manufacturers Record.

PROPOSALS

PUBLIC BUILDINGS.

CONSTRUCTION BONDS

MISCELLANEOUS.

GOVERNMENT PROPOSALS

PROPOSALS FOR WROUGHT-IRON OR Steel Pipe, Pipe Fittings, Stovepipe, Brass Tubing, Copper Ferrules, Valves, Hose Nozzles, Hose Couplings, Grease Cups, Horse-shoes, Steel or Iron Wire, Files, Wrench Parts, Tacks, Carriage Bolts, Cross-arm Braces, Cross Arms and Pins, Insulators, Packing, Gaskets, Sheetmetal, Cheesecloth, Sash Cord, Wool Waste, Scythes, Corn Brooms, Fire Brick, Steel Tapes, Pitch, Putty, Turpentine, and Japan Drier. Sealed proposals will be received at the office of the General Purchasing Officer, Isthmian Canal Commission, Washington, D. C., until 10.30 A. M. January 26, 1912, at which time they will be opened in public, for furnishing the above-mentioned articles. Blanks and general information relating to this Circular (No. 671) may be obtained from this office or the offices of the Assistant Purchasing Agents, 24 State Street, New York City, and 614 Whitney-Central Building, New Orleans, La.; also from the U. S. Engineer Offices in the following cities: Baltimore, Md.; Philadelphia, Pa.; Pittsburgh, Pa.; Boston, Mass.; Buffalo, N. Y.; Cleveland, Ohio; Cincinnati, Ohio; Chicago, Ill.; St. Louis, Mo.; Detroit, Mich.; Milwaukee, Wis.; St. Paul, Minn.; Chattanooga, Tenn.; Louisville, Ky.; Mobile, Ala., and Galveston, Tex.; Commercial Club, Kansas City, Mo., and Chamber of Commerce, Quincy, Ill. F. C. BOGGS, Major, Corps of Engineers, U. S. A., General Purchasing Officer.

PROPOSALS FOR THE NECESSARY Lifting Trusses, Lifting Mechanism, Electrical Equipment, Signals, etc., for the complete construction and erection of a single-track, single-lift bascule, same to be installed by the Commission on the 103 1/2-foot steel girders now on hand at bridge 140, relocated line, Panama Railroad. Sealed proposals will be received at the office of the General Purchasing Officer, Isthmian Canal Commission, Washington, D. C., until 10.30 A. M. February 15, 1912, at which time they will be opened in public, for furnishing the above-mentioned articles. Blanks and general information relating to this Circular (No. 675) may be obtained from this office or the offices of the Assistant Purchasing Agents, 24 State Street, New York City, and 614 Whitney-Central Building, New Orleans, La., and 1086 North Point Street, San Francisco, Cal.; also from the U. S. Engineer Offices in the following cities: Seattle, Wash.; Los Angeles, Cal.; Baltimore, Md.; Philadelphia, Pa.; Pittsburgh, Pa.; Boston, Mass.; Buffalo, N. Y.; Cleveland, Ohio; Cincinnati, Ohio; Chicago, Ill.; St. Louis, Mo.; Detroit, Mich.; Milwaukee, Wis.; St. Paul, Minn.; Chattanooga, Tenn.; Louisville, Ky.; Mobile, Ala., and Galveston, Tex.; Commercial Club, Kansas City, Mo., and Chamber of Commerce, Quincy, Ill. F. C. BOGGS, Major, Corps of Engineers, U. S. A., General Purchasing Officer.

MISSISSIPPI RIVER COMMISSION. First and Second Districts, U. S. Engineer Office, Memphis, Tenn., January 8, 1912. Sealed proposals for furnishing one locomotive crane will be received at this office until 12 o'clock noon February 8, 1912, and then publicly opened. Information on application. CLARKE S. SMITH, Major, Engrs.

TREASURY DEPARTMENT. Office of the Supervising Architect, Washington, D. C., December 27, 1911. Sealed proposals will be received in this office until 3 o'clock P. M. on the 7th day of February, 1912, and then opened, for the construction of a one-story-and-basement brick and stone faced building, covering approximately 5000 square feet ground area, first floor of fireproof construction, tin roof (including plumbing, gaspiping, heating apparatus, electric conduits and wiring, and lighting fixtures), for the United States Postoffice at Goshen, Ind., in accordance with drawings and specifications, copies of which may be obtained from the custodian of site at Goshen, Ind., or at this office, at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect.

TREASURY DEPARTMENT. Office of the Supervising Architect, Washington, D. C., January 3, 1912. Sealed proposals will be received at this office until 3 o'clock P. M. on the 15th day of February, 1912, and then opened, for the construction (including plumbing, gaspiping, heating apparatus, electric conduits and wiring, and lighting fixtures) of a one-story-and-basement non-fireproof building of approximately 4255 square feet ground area, brick faced, with stone trim, for the United States postoffice at Bonham, Tex., in accordance with drawings and specification, copies of which may be obtained from the custodian of the site at Bonham, Tex., or at this office, at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect.

TREASURY DEPARTMENT. Office of the Supervising Architect, Washington, D. C., January 16, 1912. Sealed proposals will be received in this office until 3 o'clock P. M. on the 27th day of February, 1912, and then opened, for the construction (including plumbing, gaspiping, heating apparatus, electric conduits and wiring, and interior lighting fixtures) of the United States postoffice at Union, S. C. The building to be one story and basement, of approximately 417 square feet ground area, brick faced, with stone trimming and tin roof. Copies of the drawings and specifications may be obtained from the office of the custodian of the site at Union, S. C., or at this office, at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect.

NEW BOND OFFERINGS

Bonds For Sale

For Sale—\$240,000 Mecklenburg County Bonds, to run 32 years; coupons; 5 per cent. interest, payable May 1 each year, and not less than five bonds to be paid each year on May 1. These bonds are issued for permanent road improvement in five magisterial districts in the county. Bonds to be delivered March 1, 1912, and paid for in cash at the Treasurer's office in Boynton, Va. The interest for March and April, 1912, to be deducted from the purchase of the bonds. Bids will be opened by the full Board in session at Boynton, Va., January 29, 1912. A certified check of \$1000 must accompany each bid. The Board reserves the right to reject any bid. Address bids to Chairman Board of Supervisors, Boynton, Va.

For information address any one of the Committee.
L. H. HAYES, Union Level, Va.
L. GREGORY, Chase City, Va.
J. T. GORDON, Clarksville, Va.
R. L. THOMASON, Shipwits, Va.
C. S. HUTCHESON, Clarksville, Va.
W. H. RYLAND, Dockery, Va.
SAML. A. WARREN, Bacey, Va.
L. J. PEOPLES, Keats, Va.
Committee.

December 18, 1911.

5% Water-Works Bonds

OFFICE OF THE MAYOR. Mountain Grove, Mo., January 3, 1912. To Whom It May Concern: The City of Mountain Grove, Mo., will offer for sale forty twenty-year five per cent. coupon bonds for \$500 each of said city, said bonds to bear date of February 15, 1912, interest payable semi-annually, for the purpose of constructing water-works in said city. Said bonds payable at the option of the said city at any time after five years. Sealed bids, accompanied with a certified check for \$1000, payable to the City Clerk of Mountain Grove, may be filed at any time with the City Clerk of Mountain Grove, to be opened by him, in the presence of the Mayor and Board of Aldermen, at a meeting to be held on the 12th day of February, 1912. The city reserves the right to reject any or all bids.

The city owes no debt, either bonded or otherwise, and has a balance in its treasury. For further particulars write the undersigned.

W. S. CANDLER, Mayor.
HOLLEN KELLEY, City Clerk.
E. H. FARNSWORTH, City Attorney.

5% Drainage Bonds

State of Texas,
County of Matagorda.
Notice is hereby given that on the 15th day of February, A. D. 1912, at the Courthouse in Bay City, Matagorda County, Texas, bids will be received for the sale of \$27,950 worth of bonds of Matagorda County Drainage District No. 3 of Matagorda County, Texas, bearing 5 per cent. interest, being a serial bond, said bonds being of the denomination of \$1000 each, the first of said bonds maturing on the 12th day of January, A. D. 1914, and one bond maturing each year thereafter until the full sum of \$27,950 has been paid. The said bonds must be sold at par and accrued interest, and the bidder desiring to bid on said bonds must deposit with the County Judge, at the time the bid is made, a certified check for 1 per cent. of the amount of said bond issue, said bid being subject to the approval of said bond issue by the bidder's attorneys.

The County Judge reserves the right to reject any and all bids.
Witness my hand this the 12th day of January, A. D. 1912.

W. S. HOLMAN,
County Judge, Matagorda County, Texas.

\$15,000.00 Morehead City, (North Carolina) Municipal Bonds, Interest 5 1/2 Per Cent.

The town of Morehead City, North Carolina, requests bids for (\$15,000) fifteen thousand dollars par value five and one-half per cent. thirty-year coupon bonds, interest payable semi-annually, to be issued for the purpose of paying the floating indebtedness caused by extending the water-works and electric-light system and street improvements. Sealed proposals will be received for the same up to eight o'clock P. M. the 4th day of March, 1912, and the same will be opened and publicly read at the meeting of the Board of Commissioners that day. Each bid must be accompanied by a certified check for the amount of five hundred dollars (\$500) as security of entering into the contract according to the terms of the contract if accepted.

The city reserves the right to reject any or all bids and to accept that which may seem to be to the interest of the city of Morehead City. Principal and interest payable at the city of New York.

R. N. AYCOCK, Secretary.

\$10,000 6% Bonds

The Town of Littleton, North Carolina, invites bids for ten-thousand-dollar issue of twenty-year six per cent. coupon bonds for the construction of an electric-lighting plant. Bonds in denomination of \$1000. Interest payable semi-annually. All bids must be accompanied by either a certified check or New York draft for five per cent. of the bid. Bids opened Thursday, February 15, 1912, at 8 P. M., by Board of Town Commissioners. Right is reserved to reject any or all bids. Bids should be addressed to and all information can be obtained by addressing

T. J. MILES,
Mayor.
E. C. BOBBITT,
Clerk.

New Bids for Bonds to Be Invited

All bids for \$25,000 5 per cent. Waterworks and Electric-light Bonds of Claxton, Ga., which were opened on January 16, 1912, were rejected. Re-advertisement for bids will appear in the Manufacturers Record on January 25 and February 1.

P. M. ANDERSON, City Attorney.

\$10,000 5% Bonds For Sale CHANGE OF DATE.

Beaufort, N. C.
The Commissioners of the Town of Beaufort will on the 25th day of January, 1912, at 8 o'clock P. M., at the town hall, open bids for the Coupon Bonds of the said town in the amount of ten thousand dollars (\$10,000) to cancel outstanding indebtedness.

These bonds will be issued in the denominations of not less than \$100 and not more than \$1000; will bear interest at the rate of five per cent. per annum; interest payable semi-annually, and will mature — years from their date.

Bidders are requested to designate the denomination of the bonds. These bonds will not be sold for less than par, and no bid will be considered unless accompanied by a certified check for at least 1 per cent. of the amount bid.

Any further information desired will be furnished upon application to the Town Clerk.

A. T. GARDNER, Mayor.

THOS. THOMAS, Town Clerk,
Beaufort, N. C.

MISCELLANEOUS

Drainage Work

State of Texas,
County of Matagorda.
Notice is hereby given that on the 15th day of February, A. D. 1912, at the Courthouse in Bay City, Texas, bids will be received for the construction of Matagorda County Drainage District No. 3 of Matagorda County, Texas, the work to be done as set out in the report of the engineer in said district, filed in the office of the Clerk of the County Court of Matagorda County, Texas, a copy of which report, with all necessary plans and profiles, will be furnished the respective bidders by G. G. Lovering, Palacios, Texas, Engineer in charge of said district; and it is required that all bidders on construction work of this district must furnish a bond buyer to purchase the bonds of the district at par and accrued interest. It is also required that a certified check to the amount of 5 per cent. of the amount of the contract price, same being \$27,950, must be deposited with the chairman of said Board of Drainage Commissioners, to wit, J. A. Harrison, at the time the said party, firm or corporation desires to bid on the said work, the said sum to be forfeited to the said district in case the bidder refuses to enter into the proper contract if his bid is accepted. Any and all bids may be rejected if deemed too high.

Witness our hands this the 12th day of February, A. D. 1912.
J. A. HARRISON,
Chr. Board of Commissioners,
Matagorda Co. Drainage Dist. No. 3,
Matagorda County, Texas.
C. A. MARSHALL, Secretary.

Levee Work and Clearing Land

NOTICE TO CONTRACTORS.

The Fourche Drainage District will receive sealed bids Thursday, January 30, 1912, till 2 o'clock P. M., at the office of the engineers, for building approximately 300,000 cubic yards of river protection levee along the Arkansas River and Fourche Bayou, in Pulaski County, Arkansas.

A bidder's bond of \$500 must accompany each bid.

The right is reserved to reject any or all bids.

Sealed bids will be received at the same place and till the same time for clearing approximately 500 acres along Fourche Bayou, in Pulaski County, Arkansas.

A bidder's bond of \$500 must accompany each bid.

The right is reserved to reject any or all bids.

Specifications for the above work will be ready January 10, 1912.

Wm. M. Kavanaugh, President.

Warren E. Lenon, Secretary.

LUND & HILL, Engineers.

Little Rock, Ark., December 23, 1911.

PROPOSALS

PUBLIC BUILDINGS.

CONSTRUCTION BONDS

MISCELLANEOUS.

NEW BOND OFFERINGS

\$150,000 Bonds

Sealed proposals will be received by G. Lee McGlasson, Clerk, Gainesboro, Tennessee, until 2 o'clock P. M. March 16, 1912, for \$150,000 Coupon 30-30 Jackson County, Tennessee, Good Roads Bonds. Same not to exceed 4% per cent. interest. Bonds to be dated, delivered and paid for as follows:

\$50,000 April 1, 1912.
\$50,000 October 1, 1912.
\$50,000 April 1, 1913.

Interest payable annually April 1 of each year. Denomination, \$1000. Bids will be considered for all or any portions of said bonds. Bid must be accompanied by certified check for 10 per cent. of bid, payable to order of Trustee, Jackson County, Tenn., as a guaranty of good faith. No bid considered for less than par. Right to reject any and all bids reserved.

T. M. GAILBREATH, Chrm. Co. Cr.
G. LEE MCGLASSEN, Clk. Co. Cr.
J. M. DEAN, Sect. G. R. Commrs.
Gainesboro, Tenn., January 10, 1912.

North Carolina Drainage District Bonds, Issued Under the Laws of the State, For Sale.

Sealed bids will be received at the office of the undersigned at Dover, North Carolina, until February 15, 1912, at 12 o'clock M. for the purchase of forty-five thousand dollars (\$45,000) Moseley Creek Drainage District Bonds to be issued in accordance with the laws of the State of North Carolina, Public Acts of 1909, as amended by Public Laws of 1911, bearing interest at 6 per cent. per annum, payable semi-annually; said bonds payable in ten (10) equal installments; the first installment of principal to be due and shall mature at the expiration of three (3) years from date of issue, and one (1) installment for each succeeding year for nine (9) additional years; to be issued in denominations to suit purchaser, and payable at such time and place as may be designated by purchaser upon acceptance of bid.

These bonds are exempt from all county or municipal taxation or assessment, general or special, and the interest thereon shall not be subject to taxation as for income, nor shall said bonds be subject to taxation, nor the coupons thereon, when constituting a part of the surplus of any bank, trust company or other corporation, and are deductible from the assets of such corporation in ascertaining the taxable value of the shares of such corporations.

Bids invited for the whole or any part of said bonds. Certified check of proposer in the sum of \$500 required to accompany bids for the whole of such issue, or proportional part less than for whole.

Right to accept any and all bids reserved. Bidders may submit form of bond with bid, or the same will be issued in form requested by successful bidder at the time of acceptance of bid.

All further information concerning legality of issue may be had by application to Gulon & Gulon, Attorneys, New Bern, North Carolina.

All bids must be submitted to the undersigned at his office at Dover, North Carolina. This December 20, 1911.

PRESIDENT MOSELEY CREEK DRAINAGE DISTRICT.

Road Bonds

Fulton Special Road District, Callaway County, Mo. Total issue \$100,000. Denomination \$1000. Rate 5 per cent., payable semi-annually, in March and September. No option. A certified check for \$5000 must accompany all bids. Bids received until 2 P. M. February 15, 1912. For further information write N. T. Cave, Atty., Fulton, Mo.

\$550,000.00 City of Lynchburg, Virginia, Public Improvement Bonds. Exempt from all City Taxes.

The undersigned will receive sealed proposals until 12 o'clock noon January 25, 1912, for \$550,000.00 thirty-four-year Public Improvement Bonds of the City of Lynchburg, Virginia.

These bonds will be issued in denominations of \$1,000.00 each, dated January 1, 1912, bearing interest at the rate of four and one-half per cent. per annum, payable July and January. Both principal and interest payable at the office of the United States Mortgage & Trust Company, in the City of New York.

The bonds will be engraved under the supervision of and certified as to their genuineness by the United States Mortgage & Trust Co. of New York.

A check for two per cent. of the par value of the bonds bid for must accompany each bid. Said check payable to the order of the Treasurer of the City of Lynchburg, Va., and certified to by a responsible bank and deposited as a guaranty of good faith.

The right is reserved to reject any and all bids.

R. C. QUINN, Chairman,
Finance Committee of Board of Aldermen.
RICHARD HANCOCK, Chairman,
Finance Committee of Common Council.

FINANCIAL STATEMENT.	
Assessed Valuation, 1911.....	\$3,534,580.00
Actual Valuation.....	60,000,000.00
Total Bonded Debt, including this issue.....	3,018,400.00
Water Debt, included in total.....	\$34,000.00
Sinking Funds.....	225,188.00
Sinking Fund for Water Bonds, included in above.....	63,750.00
City Property, Schools, Water-Works, Parks, Fire Departments, Public Buildings and Real Estate, etc.....	2,342,212.00
Population, 1910.....	29,494

MISCELLANEOUS

Notice to Jail Builders

Bids will be received until 2 P. M. 14th day of February, 1912, for the erection of a County Jail in Moulton, Ala. Plans can be seen in the office of J. C. Kumpe, Judge of Probate, Moulton, Ala., and also in the office of Wm. S. Hull, Architect, Jackson, Miss.

Proposals for Street Paving

ROME, GA.

Proposals will be received by the undersigned until 12 o'clock noon February 14, 1912, for grading, curbing and paving certain streets with either wood blocks, vitrified brick, Hassam compressed concrete, asphalt-macadam, sheet asphalt or bitulithic material. The work will embrace approximately furnishing and setting 6500 linear feet of curb, foundations and surfacing 17,000 square yards of pavement.

Specifications may be obtained from and plans and profiles seen at the office of the Supervising Engineer, Rome, Ga., and general information from the undersigned.

The right is reserved to reject any or all bids.

BOARD OF PUBLIC WORKS
OF ROME, GA.
R. A. DENNY, Chairman.
W. M. WILSON, Supervising Engineer.

Sewer Pipe

The City Council of Bay Minette, Ala., will on February 5, 1912, open bids for the purchase of 1200 feet of 24-inch salt-glazed sewer pipe f. o. b. cars Bay Minette, Ala.

The right is reserved to reject any or all bids. Address

W. D. STAPLETON, Mayor,
Bay Minette, Ala.

Chairs

The City Council of Bay Minette, Ala., will on February 19, 1912, open bids for the purchase of about 325 chairs suitable for a school chapel, f. o. b. cars Bay Minette, Ala. The right is reserved to reject any or all bids. Address

W. D. STAPLETON, Mayor,
Bay Minette, Ala.

Reservoir, Charlotte, N. C.

Sealed proposals will be received by the Board of Water Commissioners of the City of Charlotte, at the office of the Clerk, until 8 P. M. February 1, 1912, for building a Reservoir.

The work will include about 55,000 cubic yards of embankment, 6000 square yards 6-inch concrete slope, 600 cubic yards concrete core wall.

Clearing, grubbing, stripping, etc. Plans and specifications will be on file at the offices of the Clerk and the Engineer in Charlotte, N. C. Copies of the specifications, form of proposal, etc., will be furnished on deposit of ten (\$10) dollars, which will be refunded on the return of same.

As an evidence of good faith each bid must be accompanied by a certified check for \$2000. The right is reserved to reject any or all bids.

BOARD OF WATER COMMISSIONERS.
A. H. Wearn, Clerk.

Engineer:
GILBERT C. WHITE.

Construction of Drainage Canals

Sealed proposals for the construction of drainage canals in the Mosely Creek Drainage District, near Dover, N. C., will be received by the Drainage Commissioners of said district at Dover, N. C., up to 12 o'clock M. February 16, 1912, and at that time they will be publicly opened and read. Each proposal shall be enclosed in a sealed envelope and addressed to the Chairman of the Board of Drainage Commissioners of the Mosely Creek Drainage District, Dover, N. C., and endorsed "Proposal for Constructing Drainage Canals."

Each proposal shall be accompanied by a certified check drawn payable to the order of the Chairman of the Board of Drainage Commissioners, in the amount of one thousand dollars (\$1000); this check to be an evidence of the good faith of the bidder, and to be held as liquidated damages in case the award is made and the contract and bond are not entered into promptly. Checks of unsuccessful bidders will be returned as soon as the award is made.

Specifications and blank forms of proposal will be furnished upon application, and a full set of maps, plans and profiles may be seen at the office of the Drainage Commissioners, or at the office of the Engineer to the Board of Commissioners at New Bern, N. C.

The approximate length of these canals is 14 miles, and the approximate yardage to be excavated is 415,000.

The right is reserved to reject any and all bids.

G. V. RICHARDSON,
Chmn. Bd. Commissioners.
R. R. EAGLE, Engineer.

Roads, Bridges and Docks

The Board of County Commissioners of St. Lucie County, Florida, will receive sealed bids for the construction of approximately sixty (60) miles of hard-surface roads, also bridges and docks, for which bonds for \$200,000 have been issued, at a meeting to be held in the Courthouse, Fort Pierce, Fla., February 7, 1912, 2 P. M. The Board reserves the right to reject any or all bids. Plans, profiles and specifications may be seen at the County Clerk's office, Fort Pierce, Fla., or at the office of D. D. and C. M. Rogers, Engineers, Fort Pierce and Daytona, Fla.

Construction of Concrete Lock

NOTICE TO CONTRACTORS.

State Capitol, Tallahassee, Florida. Sealed proposals will be received by the Trustees of the Internal Improvement Fund of the State of Florida until 10 o'clock A. M. Thursday, February 1, 1912, for building a concrete lock in the Miami Drainage Canal about four miles from Miami. A complete set of drawings and specifications can be obtained from the office of the Chief Engineer, Tallahassee, Florida, on the payment of two dollars (\$2) to cover cost of same.

Each proposal submitted must be accompanied by a certified check, payable to W. V. Knott, State Treasurer, for five hundred dollars (\$500) as a guarantee that the party awarded the work will execute a proper contract and bond within 15 days. Checks of unsuccessful bidders will be returned to them immediately after awarding the contract. The Trustees reserve the right to reject any or all bids. Proposals should be addressed to Albert W. Glichrist, Governor and Chairman Trustees Internal Improvement Fund.

J. O. WRIGHT,
Chief Drainage Engineer.
Approved by the Trustees of the Internal Improvement Fund, January 2, 1912.

J. C. LUNING,
Secretary.

Pipe and Special Castings

Sealed bids will be received at the office of the Board of Water Commissioners in the city of Macon, Georgia, until 8 P. M. on the 25th day of January, 1912, for furnishing f. o. b. cars Macon, Georgia, approximately 1125 tons twenty-inch, 300 tons twelve-inch, 380 tons ten-inch, 175 tons eight-inch, 1280 tons six-inch,

all Class "B" cast-iron piping, together with 150 tons special castings.

Pipe and specials to be in accordance with specifications now on file in the office of the Board of Commissioners, which said specifications can be had upon application to the Board.

The Board of Water Commissioners in considering said bids reserves the right to fix definitely the quantity of pipe, whether more or less than above indicated.

The Board of Water Commissioners also expressly reserves the right to reject any and all bids.

Each bidder must state in bid submitted time necessary for delivery of pipe and must guarantee compliance with bid.

Bids must be sealed and addressed to the Board of Water Commissioners, Macon, Georgia, and marked "Bids for Piping."

BOARD OF WATER COMMISSIONERS.
By W. H. Fetner, Chairman.

Proposal for Erection of Hamilton County Jail, Chattanooga, Tenn.

Until 2 o'clock P. M. February 15, 1912, sealed proposals will be received by the Courthouse Commission at their office in the Hamilton National Bank Building, Chattanooga, Tenn., for the erection of the Hamilton County Jail.

Plans and specifications may be obtained from Barnwell & Jones, architects, Chattanooga, Tenn., after January 15, on deposit of \$25.

A certified check in the sum of \$2500, payable to M. M. Allison, chairman, must accompany each proposal. The successful bidder shall furnish a bond acceptable to the Commission in the sum of one-third of the contract price.

Proposals to be based upon monthly payments to be made upon architects' estimate of completed construction of 80 per cent. of said estimate. The balance of 20 per cent. to be paid upon completion and acceptance of said work.

The right to reject any or all bids is hereby reserved.

M. M. ALLISON,
Chairman.

Greatest Crushing Capacity With Least Power

are the two features of unequalled importance, but there is also a decided advantage in combining greatest strength with lightest weight in the

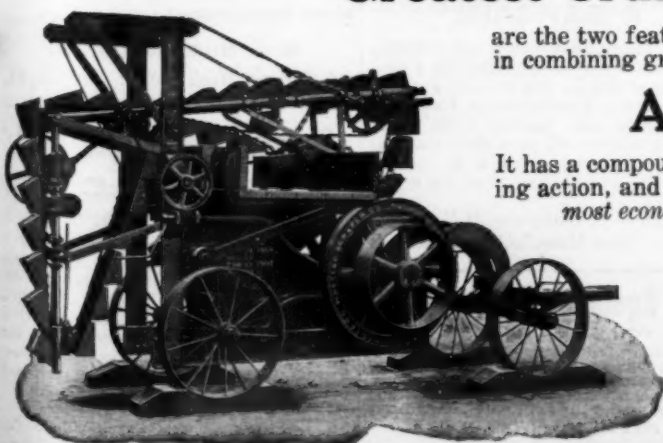
Aurora Steel Rock Crusher

It has a compound oscillating and reciprocating motion producing a continuous crushing action, and its compact form together with the qualities named, make it by far the most economical for contractors' use. There is no experiment about it—its economy and dependability have been fully proved by years of service in every part of the country. Let us show you why it will prove most economical for you. Write for our Special Crusher catalog.

Western Wheeled Scraper Company

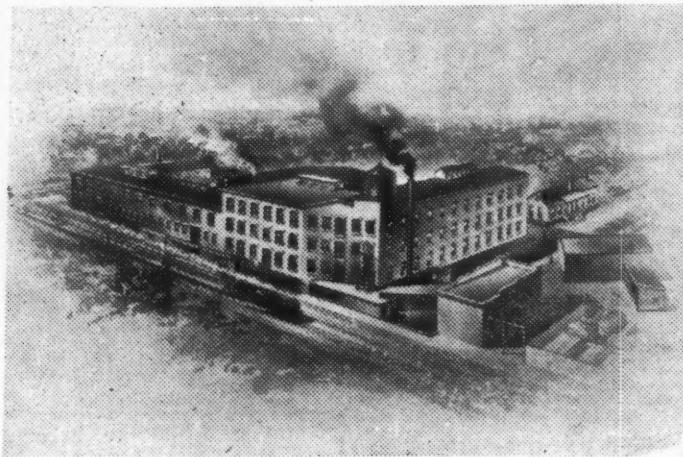
Earth and Stone Handling Machinery

Aurora, Ill.



Special Advertisements of General Interest.

FOR SALE OR LEASE



Manufacturing plant or warehouse on Bellwood Avenue, Southern Railway and A. B. & A. R. R., containing two acres of land, with 600 feet railroad frontage, three-story brick mill constructed building, 42,000 square feet floor space; elevator, electric light plant, steam heat and modern plumbing. Has 100 H. P. engine and 125 H. P. boiler. Office building separate. Owner retiring on account of ill health.

H. M. BEUTELL, Owner - - ATLANTA, GA.

THE
West Point
ROUTE

Atlanta & West Point R. R.

THE WESTERN
RAILWAY OF ALABAMA

Offers excellent locations for
Truck, Fruit, Stock
And General Farming

Available Factory Sites. Abundance of Raw Material and Good Transportation Facilities.

Write for Information.

R. E. LUTZ
General Agent
MONTGOMERY, ALABAMA

Complete Saw Mill Plant, Dry Kiln and Logging Equipment

FOR SALE
Mill has a daily capacity of 25,000 feet. Logging outfit consists of Locomotive, three and one-half miles of tramroad and six log trucks. Eighteen to twenty million feet of choice Pine timber, well blocked. Mill located about 35 miles south of Savannah, on the Seaboard Air Line Railway. Fifteen to twenty million feet additional timber can be had in easy reach of this plant. For full particulars address
ALBERT FENDIG & CO., Brunswick, Ga.

N&W
RY

WOODWORKING PLANT FOR SALE
In a progressive city of twenty-five thousand people, situated in Eastern Virginia, is offered for sale a wood-working plant. Contains three acres of land, factory buildings, boiler-rooms, siding and harbor. This plant at present time is in full operation, but on account of being engaged in the manufacture of trucking packages, desires to change location. Plant well adapted to all kinds of wood-working and other manufacturing purposes. If proper parties become interested in this enterprise, stock will be taken in part payment of the same. For further particulars write F. H. LaBaume, Agr'l and Ind'l Agent, File M-3976, Roanoke, Va.

VACANT FACTORY BUILDING FOR SALE OR LEASE
There is for sale or lease a large vacant factory building, carrying about fifty thousand feet of floor space, well adapted to all kinds of machine or textile purposes. Factory is located in city of about 75,000 population; has double sidetracks in yard, about two acres of ground, with street-car facilities, and where labor is abundant. If interested, write F. H. LaBaume, Agricultural and Industrial Agent, Roanoke, Va., referring to File M-3977.
For information regarding other industrial or business opportunities, mineral properties, timber and agricultural lands, write to F. H. LaBaume, A. and I. Agent, N. & W. Ry., Roanoke, Va.

N&W
RY

VALUABLE PROPERTY FOR SALE

By virtue of a decree of the Superior Court of Clay County, North Carolina, in the case of Stocks vs. Isbell Corundum Company, the property of the Isbell Corundum Company will be sold at the Courthouse door in Hayesville, Clay County, North Carolina, at public auction to the highest bidder, subject to confirmation by the court. The property consists of 800 acres valuable timber land in Clay County, North Carolina, and on the property is a valuable deposit of high-grade corundum. There is also on the property a large building filled with machinery already set up for cleaning corundum and a large engine and boiler little used. Property may be sold as a whole or in parcels to suit purchasers. Terms cash. For further information address Edmund B. Norvell, Murphy, N. C., or F. S. Johnston, Franklin, N. C. This 21st December, 1911.

F. S. JOHNSTON,
EDMUND B. NORVELL,
Commissioners.

COMPLETE SAW MILL PROPERTY FOR SALE

Sawmill property at Ford River, Mich., consisting of three-hand-saw mill, shingle mill, tile and post mill, lath mill, docks and trams, blacksmith shop and machine shop all stocked with tools, large store and office building, large boarding-house, large barns, sixty-three houses, lands, etc., all of which will be sold at a bargain. Apply to
THE I. STEPHENSON COMPANY,
Wells, Delta County, Mich.

FURNITURE MANUFACTURING PLANT FOR SALE

Bargain: opportunity of a lifetime; furniture manufacturing plant; three-story brick; modern machinery; electric light; steam heat; cheap fuel; within 150 miles largest cities in United States; track connections with all railroads.
TRUSTEE, Box 37, Wilkes-Barre, Pa.

RECEIVERS' SALE

RAILROAD CONTRACTORS EQUIPMENT

Steam Shovels, Locomotives, Cars, Hoists, Derricks, Locomotive Cranes, Buckets, Etc.,

Totaling \$200,000.00

Write for full list and prices.

Address, RECEIVERS

909 New First National Bank Building, COLUMBUS, OHIO

SPLENDID FARM LANDS FOR SALE CHEAP

My recent advertisement of six forty-acre tracts of land for sale to good white families of limited means brought so many inquiries that I have persuaded my brothers, who own adjoining lands, to agree to sell on the same terms. This general body of several thousand acres is situated on and near the A. G. S. R. R. from ten to fourteen miles from Tuscaloosa, between the stations of Cottondale and Coaling, on and near public roads adjacent to many good markets. The soil is a light loam from four to eight inches deep, under which there is a mixture of red clay and sand, is generally well watered, easy to cultivate, and, by using some fertilizer, will produce about fifty bushels of corn and approximately one bale of cotton per acre, and is especially well adapted for fruits and vegetables. A more ideal location for a progressive colony could not be found. While this is a high pine country, unsurpassed for health, much of the land is practically level, as level as most any farmer would desire. The timber down to ten inches has been sold, and several sawmills are now located on and near the land, making building especially cheap. The land can now be cleared and prepared for cultivation at very small cost. By reserving the mineral rights, this land can be sold during the next ninety days at the astonishingly low price of \$500 per forty, purchaser having the privilege of taking one or more forties. While all cash is preferred, by making a small cash payment terms to suit the purchaser can be arranged for the balance.

While it would seem that most any purchaser could be satisfied from the above lands, we have other most superior farm lands nearer to the city of Tuscaloosa for sale at prices ranging from thirty dollars to three hundred dollars per acre.

ROBISON BROWN, Tuscaloosa, Alabama.

WOODWORKING PLANT FOR SALE

Entire plant of the Philadelphia Veneer & Lumber Co., Inc., consisting of land, buildings and machinery. Machinery consists of engines, boilers, pumps, heaters, band mill, short-log mill, veneer slicers, dryers, veneer saw, planers, etc., complete outfit for the making of cigar-box lumber and shooks.

Splendid location for a furniture, chair, mantel or woodworking plant. Right in the heart of the Appalachian forest region. Cheap lumber and labor. White help. Located on two trunk lines. For further particulars address

Philadelphia Veneer & Lumber Co., Inc., Knoxville, Tenn.

BRICK FACTORY BUILDING and FACTORY SITE FOR LEASE OR SALE ON EASY TERMS

Two-story brick factory building 200x60 feet, with ells, giving total floor space 30,000 sq. ft., with power, light, heat and water, automatic sprinkling system, 150 H. P. Corliss engine and two boilers. Site 385x200 feet, within corporate limits; abundant help nearby; accessible to electric cars, railroad and steamboat lines.

BARTON MYERS, NORFOLK, VA.

BRICK PLANT IN CENTRAL FLORIDA FOR SALE

Now operating to full capacity. Inexhaustible clay deposit. Good-paying investment, but present owner has good reasons for wishing to sell. Address

"BRICK PLANT,"
Care Manufacturers Record.

Modern Foundry & Machine Shop A BARGAIN

Having bought at receiver's sale a modern Foundry and Machine Shop, including a complete line of Engine and Sawmill Patterns and an amount of Mill Supplies, I am offering it at a bargain. Located in the South, close to iron and coal, with three railroads and non-union labor. This is a desirable plant for the manufacture of any line of machinery.

Address "H,"
Care Manufacturers Record.

Fully Equipped Knitting Mill FOR SALE OR LEASE

Two-story substantially built brick building, with engine and boiler, situated in one of the fast-growing cities of North Carolina, both rail and water shipping facilities, and good opportunity for right party. Address
BOX 308, Fayetteville, N. C.

FACTORY SITES FARM LANDS

Business Opportunities, Timber Lands, Realty Investments

We will take pleasure in submitting information pertaining to either of the above departments.

S. L. NUSBAUM & CO.
600 Citizens' Bank Bldg. Norfolk, Va.

Complete Planing Mill Plant FOR SALE

ON FEBRUARY 20, 1912
Located at Lillington, N. C., on Raleigh & Southport Railroad; 15 acres land; main building, two drykilns, boiler building, three tenement-houses, two planers. Capacity, 15,000 feet daily; ready to operate. Terms sale, cash. Date sale, February 20, 1912. Ten per cent. deposit required successful bidder. Private bids considered between now and sale.

E. G. DAVIS, Trustee,
Fayetteville, N. C.

Bargains in Machinery and Supplies.

DYNAMOS and MOTORS

Direct Connected Units

Boiled Generators Alternating Current Motors

Direct Current Motors

300 OF THEM

Thoroughly overhauled and fully guaranteed.

In stock for immediate delivery.

We Buy, Sell, Repair, Rent or Exchange.

E. LEVENE & CO.

124 N. 3rd. St., Philadelphia

LIGHTING DYNAMOS

40-light General Electric, speed 1350.
75-light Allis-Chalmers, speed 1300.
60-light Triumph, speed 1400.
150-light Westinghouse, speed 1200.
250-light Westinghouse, speed 875.
300-light General Electric, speed 900.
Condition Guaranteed.
110-volt. 250-volt. 500-volt.
A. C. and D. C. Motors and Generators in stock. Send for Bargain List.
MILLER-OWEN ELECTRIC CO.,
217-219 First Ave., Pittsburgh, Pa.

BARGAIN Woodworking Machinery

24" x 12" four-side

FAY ENDLESS BED PLANER

In condition to run immediately.

JAMES H. BROWN, 287 Clifton Place, Brooklyn, N. Y.

WATER TUBE BOILERS

Two 250 H. P. "Heine," complete, with all attachments, good for 140 lbs. pressure. Will make price low f. o. b. cars Philadelphia.

L. F. SEYFERT'S SONS, INC.,
437-39 N. Third Street, Philadelphia.

FOR SALE CHEAP

Four 100 H. P. Portable Return Flue Boilers. 12"x18" Erie City Engine. 12"x18" Birmingham Engine. 18"x22" H. S. & G. Engine. R. Hand Knife Grinder. 10" Outside Molder.

Tampa Machinery Exchange, Tampa, Fla.

Engines, Generator and Deep Well Steam Heads

FOR SALE. CHEAP.

1 9x8 Erieo Engine, direct connected to a 30 K. W. 125 V. D. C. Generator.
1 13x12 Erieo Steam Engine.
1 10x36 Hill Deep-Well Steam Head.
1 6x36 Cook Deep Well Steam Head.
All the above in fine condition.
COGHLIN MACHINERY & SUPPLY CO.,
Toledo, Ohio.

We have for sale the following

Bundy Steam Traps:

1 No. 105 Trap, 125 gallons per dump.
1 No. 106 Trap, 235 gallons per dump.
1 No. 108 Trap, 760 gallons per dump.
Temperature 180 degrees.

These traps have never been used and are in perfect condition. Make offer on one or all.

MEMPHIS ARTESIAN WATER DEPARTMENT
Memphis, Tenn.

Second-hand Electric Motors

We have the largest stock of second-hand electric motors and generators in America, and buy and sell, rent, exchange and repair electrical machinery of all kinds. Send for our "Monthly Bargain Sheet," showing complete stock with net prices. All machines guaranteed in good order.

GREGORY ELECTRIC CO.,
Sixteenth and Lincoln Sts., Chicago, Ill.

Engines, Boilers, Generators, etc.

1 22 and 40-36 Corliss Cross Compound.
2 24x48 Corliss Engines.
1 22 and 36-50 Tandem Corliss.
2 Phoenix Tandem 12 and 20x16 Engines.
1 Allis Corliss Tandem, 22 and 24x48 Engine.
Engines direct connected to generators.
SEND for list and prices.
THE DORNER RAILWAY EQUIPMENT CO.
Irving Park Ave., corner Southport.
Chicago, Ill.

DYNAMOS and MOTORS

I buy, sell, rent and exchange.
The best and the cheapest.
Let me know what you have for sale and what you want to buy.

THOMAS YEARSLEY

211 N. 3rd Street Philadelphia, Pa.

FOR SALE

One 26"x14" Lathe. One 20"x10" Lathe. One 18"x8" Lathe. One 14"x6" Lathe. One 30 H. P. Tractor Engine. One No. 2 B. Koehring Cement Mixer. One No. 1 B. Koehring Cement Mixer. One No. 1 Smith Mixer, with gasoline engine. One No. 1 Smith Mixer, with boiler and engine. Two 125 H. P. Hor. Tub. Boilers. Two 110 H. P. Hor. Tub. Boilers. One 50 H. P. Portable Boiler on skids. Three Berlin Planers and Matchers, 4"x3". One Mississippi Planer and Matcher, 4"x14".
CHAS. T. LEHMAN, - Birmingham, Ala.

ELEVATORS

Engines, boilers and pumps. Machine Tools, Contractor's Equipment. Machinery Bought, Sold and Appraised.

RIKER MACHINERY CO.

110 WEST 34th ST., NEW YORK

J. P. Mulholland, Manager

Do You Need

MACHINE TOOLS?

We have a large and well-selected stock in our warehouse at prices that will materially reduce your equipment bills. Let us give you details of some of the following tools.

LATHES

1 60"x16" "Fifield," internally geared face-plate.....\$1400.00
1 48"x12" "Fifield," internally geared face-plate.....1250.00
2 42"x32" "Draper," one has taper attachment, \$1400.00 each; taper \$100.00 extra.
1 40"x18" "Fifield," internally geared face-plate.....1500.00
1 40"x18" "Fifield," internally geared face-plate.....1250.00
1 38"x18" "Fifield," internally geared face-plate.....1250.00
1 32"x16" "Fitchburg".....700.00
1 32"x32" "Fifield".....1200.00
1 30"x14" "Fifield".....475.00
1 20"x10" "Perkins".....400.00
1 22"x10" "Fifield".....350.00
1 16"x6" "LeBlonde".....250.00
1 14"x6" "LeBlonde," each.....225.00

PLANERS

1 52"x52"x23" 9" "Betts," one head.....1000.00
1 42"x36"x12" "American," open slide.....2250.00
1 40"x40"x10" "Powell," one head.....900.00
2 20"x30"x85" "Sellers," one head.....190.00

RADIAL DRILLS

1 12" "Bickford," plain.....650.00
1 14" "Bickford," universal.....525.00
1 14" "Bickford," plain.....750.00

BORING MILLS

1 60", one head, vertical.....400.00
1 37" "Bullard," two heads, vertical... 800.00
1 54" "Newton," horizontal.....450.00

PIPE MACHINES

1 10" "Curtis & Curtis".....250.00
1 6" "Cox & Sons".....400.00
1 No. 3 "Eaton, Cole & Burnham," 1 to 4".....350.00
1 No. 3 "Bignall & Keeler".....240.00

PRESSES

2 No. 2 1/2 pattern "Phila. Machine Co." 165.00
1 No. 2 "Biles".....400.00
1 P-1 "Ferracute".....115.00

HAMMERS

1 1500-lb. steam "McDougall & Potter" 900.00
1 800-lb. steam drop "Bement-Miles" 650.00
1 500-lb. "Champion Beauty".....450.00
1 400-lb. "Champion Beauty".....350.00
1 150-lb. belt-power "Scranton".....235.00

GEAR CUTTER

1 72" "Gould & Eberhardt".....850.00

Our large, well-planned and lighted warehouse makes critical examination of any tool easy and affords the best facilities for quick and safe handling of heavy pieces.

L. F. SEYFERT'S SONS, Inc.

437-439-441 N. 3d. St., Philadelphia

SPIRAL PIPE

FOR SALE CHEAP

9000 feet Galvanized Spiral Riveted Flanged Pipe, size 9". Heavy gauge, in first-class serviceable condition, suitable for dredge work, air pressure, etc. Will make very attractive price in quantities.

MARINE METAL & SUPPLY CO.

167 South Street,

NEW YORK CITY.

Generators Engines Machine Tools Pipe

H. KLEINHANS

Oliver Building Pittsburgh, Pa.

In revising our manufacturing equipment, we find the following first-class

Used Machine Tools

which we offer at attractive prices

ENGINE LATHES

14 in. x 6 ft. Plather, Q. C. G.
16 in. x 6 ft. Hendey, Q. C. G.
16 in. x 6 ft. Pratt & Whitney, Q. C. G.
16 in. x 8 ft. Reed.
18 in. x 6 ft. Lodge & Shipley, Q. C. G.
18 in. x 8 ft. Lodge & Shipley, Q. C. G.
18 in. x 10 ft. Lodge & Shipley, Q. C. G.
20 in. x 8 ft. Lodge & Shipley, Q. C. G.
20 in. x 10 ft. Lodge & Shipley, Q. C. G.
22 in. x 14 ft. Lodge & Shipley, Q. C. G.
24 in. x 8 ft. Lodge & Shipley, Q. C. G.
24 in. x 10 ft. Lodge & Shipley, Q. C. G.
27 in. x 10 ft. Lodge & Shipley, Q. C. G.
36 in. x 12 ft. Lodge & Shipley, Q. C. G.
36 in. x 14 ft. New Haven.

SPECIAL LATHES

24 in. x 7 ft. Lodge & Shipley Chucking Lathe.

No. 3 Lodge & Shipley Rapid Reduction Lathe.

PLANERS

26 in. x 36 in. x 10 ft. Sellers.

METAL SAWS

No. 3 Nutter-Barnes Cold Saw.

Franklin Cold Saw, 3/4 in. capacity.

Globe Power Hack Saw, 3 in. capacity.

Universal Power Hack Saw, 6 in. capacity.

MISCELLANEOUS MACHINES

Whitton Centering Machine.

Mumford 12 in. x 40 in. Molding Machine.

Write for complete description with prices of machines in which you are interested.

THE LODGE & SHIPLEY MACHINE TOOL CO.

CINCINNATI, OHIO

SAW MILL MACHINERY

FOR SALE

One mile 24-pound Steel Rails.

One Cylinder Barrel Stave Saw.

One Stave Jointer.

One Heading Machine.

One Gang Edger Saw.

One Power 26" Surfacer and Jointer.

One Power 44" Circular Resaw.

One 35 H. P. Sawmill, complete, with Gang Edger.

One 25 H. P. Sawmill.

All of the above is in first-class condition.

E. S. ADKINS & CO.,

Salisbury, Md.

FOR SALE

One (1) Sturtevant Single Exhaust Fan with direct-connected Vertical Steam Engine, suction 36" dia., upward outlet 30" dia.

One (1) Clayton Air Compressor, 6"x10"x8", steam driven.

One (1) Hydraulic Press, plates 14" wide, 34" long, ram 12" diameter, 12" stroke, pump 5"x7" stroke.

CHAS. ROSS & SON CO.,

148-156 Classon Ave., Brooklyn, N. Y.

REBUILT ENGINES, BOILERS, PUMPS, Etc.

FULLY GUARANTEED

14"x36" L. H. Weisen & Vilter Corliss Engine.

14"x42" R. H. Fraser & Chalmers Engine.

42"x14" Horizontal Tubular Boiler, 110 lbs.

62"x16" Horizontal Tubular Boiler, 120 lbs.

72"x20" Horizontal Tubular Boiler, 100 lbs.

78"x30" Horizontal Tubular Boiler, 110 lbs.

90"x16" Internally Fired Marine Boiler, 95 lbs.

18 1/2-24-10 Worthington Duplex Pump.

14-24-12 Canton-Hughes Duplex Pump.

No. 3 Style "B" Crusher.

14-ton Kelly-Springfield Road Roller.

50 H. P. Fairbanks-Morse Gasoline Engine.

30 H. P. Struther-Weiss Gasoline Engine.

7x10 Double Cylinder Single Drum Lidger-wood Hoist, without boiler.

24x8 Putnam Lathe.

1000 to 8000-gal. capacity Storage Tanks.

We handle everything in the line of Machinery and Supplies. Write for our Special Bargain List No. 239.

CHICAGO HOUSE WRECKING CO.,
36th and Iron Streets, Chicago, Ill.

SECOND-HAND

Machine Tools

LATHES.

18x8 Lodge & Shipley, compound rest.
9"x14" Star, plain rest.
12"x5" Prentiss Bros., R. & F.
15"x6" Flather, compound rest, P. C. F.
16x8 Prentiss Bros., compound rest, P. C. F.
16x6 Reed, compound rest, taper and turn.
20x10 Prentiss, compound rest, P. C. F.
20x6 Fay & Scott, compound rest, P. C. F.
24x14 Reed, high speed.
27x12 Pratt & Whitney, C. R., P. C. F.
28x10 Putnam, C. R., P. C. F.
28x10 Gleason, compound rest, taper.
30x12 Pond, C. R., P. C. F.
32x17 Bement-Miles, C. R., triple geared.
36x18 Reed, compound rest, P. C. F.
40x18 Newark, triple geared, C. R., P. C. F.
46x28 Fitchburg, T. G., C. R., P. C. F.
102x35 Bement, compound rest, T. G.
21x14 Powell, compound rest, P. C. F.
26x13 Fitchburg, compound rest, P. C. F.
84x20 Fitchburg, C. R.

SCREW MACHINES.

2x24 Jones & Lamson, flat turret.
20x6 Bardner & Oliver, friction head.
No. 2 1/2" Warner & Swasey, wire feed.
No. 2 1/2" Garvin, wire feed, friction head.
No. 1 Garvin, wire feed.
1/4" National Acme, automatic.
1/4" Gridley, automatic.
No. 6 Brown & Sharpe, friction head.
1" Smurr & Kamen, wire feed.
1/2", 3/4", 1" and 2 1/2" Pratt & Whitney automatics.
No. 2 1/2" Pratt & Whitney, wire feed.
No. 1 7-16" Pratt & Whitney, wire feed.

MILLERS.

No. 15 Brainard, universal.
No. 4 1/2" Becker, plain.
No. 3 Cincinnati, universal.
No. 3 Brown & Sharpe, universal.
No. 2 LeBlonde, plain, back gears.

No. 2 Pratt & Whitney, Lincoln pattern.
No. 3 Brown & Sharpe, plain.
No. 7 Becker-Lincoln.
No. 3 Cincinnati, plain.
No. 12 Brown & Sharpe, manufacturers.

DRILLS.

26" Lodge & Davis, sliding head.
28" Barnes, sliding head.
36" Bickford, radial.
No. 25 Foote-Burt, high speed.
F 12" Baker Bros.
10-spindle Gardam, adjustable.
4-spindle Foote-Burt, gang.
25" Snyder, sliding head, tapping attachment.
7-spindle Slate, bedstead.

SHAPERS.

9" Gould & Eberhardt.
20" and 24" Hendey, friction.
15" Cincinnati, crank.
30" Gould & Eberhardt, crank.

MISCELLANEOUS.

Boring Mill, 37" Bullard, 2 heads.
Grinder, Sellers, universal tool.
Planer, 24x24x6 Pease, 1 head.
Planer, 30x20x10 Gleason, 1 head.
Planer, 36x26x12 Betts, 4 heads.
Planer, 48x42x8 Farrell, 1 head.
Planer, 48x48x15 Pond, 3 heads.
Boring Mill, 10" Pond.
Grinder, Walker, electric surface.
Grinder, No. 2 1/2" Bath, universal.
Gas Engine, 3 H. P. Fairbanks.
Hammer, 50 lbs. Bradley, compact.
Hammer, 1000 lbs., Pratt & Whitney, drop.
Gear Cutter, 16x4 Gould & Eberhardt.
Grinder, 12x42 Landis, universal.
4" Saunderson Pipe Machine.
Slotter, 16", Bement, motor driven.
No. 2 Giant Keyseater.
Brake, 5" Niagara.
Pipe Machine, 3" Jarecki.
Grinder, 30" Blount Water Tool.

Prentiss Tool & Supply Company

SINGER BUILDING
149 BROADWAY

NEW YORK
N. Y.

ENGINES

28x48 Hardy-Tynes Corliss.
26x36 Erie City, 4-valve.
22x24 Erie Ball.
20x48 Harris Corliss.
20x24 Harrisburg.
18x42 Wetherill Corliss.
18x27 Erie City, 4-valve.
18x24 Ide Side-Crank.
18x18 Armstrong & Simms.
16x42 Allis Corliss.
16x36 Allis Corliss.
16x18 Ames C. C.
14x36 Hamilton Corliss.
14x16 Buckeye Side Crank.
13x12 Atlas, 4-valve.
7x10 Harrisburg C. C.

ELECTRICAL

150 K. W. Wghse. S. Ph., 60 cy., 600 R. P. M.
110 K. W. G. E. 550 or 250-volt Gen., 600 R. P. M.
75 K. W. G. E. 125-volt dir. con. Ball-Wood Engine.
60 K. W. G. E., type "AS", 60 cy., S. Ph., alt.
17½ K. W. Wghse. 125-v. Dynamo.
6½ K. W. Crocker-Wheeler 125-v. Dynamo.

SPECIAL, \$700 EACH

Two 350 H. P. Abendroth & Root Water-Tube Boilers, 150 lbs. steam pressure, complete, ready for service, all nicely cleaned and painted. Must move immediately, and to save double handling, freight, etc., make price as quoted above.

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NEW YORK

Rebuilt Engines and Boilers

Engines—Corliss.—18x42 Lane & Bodley, 18x36 Ohio Heavy Duty, 15x42 Allis, 13x30 Lane & Bodley.
Engines—Automatic.—14x24 Buckeye, 11x16x12 Buffalo Compound, 13x15 Taylor, 13x16 Atlas, 13x12 Harrisburg-Ideal, 13x12 Phoenix, 12x14 Green, 12x12 Armstrong & Simms, 11x16 Atlas, 10x12 Valley, 8x14 Noyes.
Engines—Throttling.—18x24 Atlas, 14x18 Sinker-Davis, 14x14 Lewis Vertical, 12x16 Reed, 12x14 Brownell, 10x16 Bass, 10x12 Atlas, 9x14 Lane & Bodley, 8x10 Erie, 6x8 Industrial.
Boilers—Stationary.—72x18, 66x16 High-Pressure, 72x18 Standard, 72x16, 66x18, 60x16, 60x14, 54x14, 48x14, 44x12, 42x12, 36x16, etc.
Boilers—Fire Box.—100, 80, 60, 50, 40, 35, 30, 25, 20, 16, 12, 10 and 8 H. P., etc.
Boilers—Vertical.—50, 40, 35, 30, 25, 20, 16, 12, 10, 8 and 3 H. P., etc.
Heaters.—All sizes, Open and Closed.
Pumps.—All sizes, Single and Duplex.
Electrical.—30 K. W. Generator, direct connected to 8x10 Skinner Engine; 20 K. W. Generator, direct connected to 8x10 Economie Engine; 15 K. W. Belted Generator.
Miscellaneous.—Sawmills, Lath Mills, Edgers, Cut-off Saws, Re-Saws, Blowers, Exhaust Fans, Tanks, etc. Write for list. Also full assortment of new machinery.
Sole manufacturers of the celebrated "Leader" Injectors and Jet Pumps. Send for circular.

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One (1) 2" Acme Bolt Cutter.
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One (1) 1½" Acme Bolt Cutter.
Two (2) 36" Barnes B. G. P. F. S. H. Drills.
One (1) 22" Garvin S. H. Drill.
One (1) 20" Prentiss W. F. Drill.
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One (1) 38" raised to 42"x24" New Haven, practically new.
One (1) 28"x13" Fildes triple geared, practically new.

One (1) 24"x12" Garvin 1½" H. S.
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Two (2) 22"x12" Schumacher & Boye.
One (1) 22"x12" Dietz & Gang.
Two (2) 20"x11" Wright.
One (1) 20"x11" New Haven.
One (1) 18"x8" Hendey T. A.
One (1) 16"x6" Harrington.

SHAPERS

Two (2) 28" Juengst.
One (1) 20" Cincinnati.
Two (2) 15" Smith & Mills.

MISCELLANEOUS

One (1) 36" Bickford Radial Drill.
30" Bullard Turret Head Boring Mill.
One (1) 150-ton Sellers Wheel Press.
Three (3) Bement Keyseaters.
One (1) 48" Bement Car Wheel Boring Mill with Crane.
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One (1) 14" Newark Slotter.
One (1) 40"x8" Newark Blinsee Horiz. Boring Mill.
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One (1) No. 3 Long & Alstatter Punch and Shear.
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Chaser Grinder.
Two (2) 500-lbs. Merrill Board Drop Hammers.
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Coulter & McKenzie Spring Tapering Machines.
Large number of Spring Benders, Spring Eye Machines and Banding Machines.
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43" Boiler Rolls, hand driven.
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1 No. 4 Austin Crusher.
6 Sand Blast Machines.
1 36" gauge Electric Locomotive.
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Complete 6' band mill outfit. 150 H. P. boiler and engine, good as new. Two Climax geared locomotives, 36" gauge, 22 tons. 1 Surrey-Parker log loader, nearly new. 16 Russell logging cars, 36" gauge, in good condition. Two miles 35-lb. steel rail with splices, excellent condition. Address ALTA LUMBER CO., INC., Pulaski, Va.

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12 H. P. Gasoline Engine; 6 K. W. Generator; Switchboard; Kewanee Tank Pump; Shafting; Belting for Sale. Good condition.

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20x42 William Harris Corliss Engine; wheel 15 ft. by 24 in. face. About 100 ft. 22 in. Leather Belt. Feed-Water Heater. Oil Separator. Condition A-1. Price, f. o. b. cars, \$1000.

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20x48 Wheelock Corliss.
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2—200 H. P. Smith Gas Producers, complete with scrubbers.
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3 60"x16 John Mohr Boilers.
1 Standard Water-Tube Boiler.
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1 18x24 Bates.
1 18x24 Allis.
1 18x24 Brown.
1 18x24 Lane & Bodley.
1 20x24 Wetherill.
1 22x24 Hamilton.
1 24x24 Atlas.
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1 28x54 Hamilton.
Automatic Engines of all sizes.
1 40-ton Corliss Engine Type De La Vergne
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1 lot Brewery Tanks.
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Belting, Shafting, Pulleys and Hangers.

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FOR SALE OR RENT

1 30-ton Little Giant Special High Crane
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Traction Steam Shovel. 1 No. 0 Thew Traction
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comotives. 2 10x16" Baldwin 36" S. T. Lo-
comotives. 1 13x22" Baldwin 6-driver S. G.
S. T. Locomotive. 2 10-ton 3-wheel New York
Steam Rollers. 1 2-ton Tandem Universal
Puddle Roller. 1 3/4-ton Tandem Iroquois
Asphalt Roller. 7 Steel Guy Derricks, 70'
masts. 2 3-yd. Hayward Orangepeel Buckets.
1 2-yd. Hayward Clamshell Bucket. 1 1 1/2-yd.
Hayward Clamshell Bucket. 5 Lambert D.
D. Boom Swing Electric Hoists, 40 and 60
H. P., D. C., 230 volts. 40 Hoisting Engines,
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mounted, with and without boom swings,
from 4 to 100 H. P. Air Compressors, Pumps,
Boilers, Engines, Rock Crushers, etc. Get
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HENRY A. HITNER'S SONS CO.,
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**70-Ton Steam Shovel
\$2500**

We offer for quick sale one Vulcan 70-ton
steam shovel with three sets of engines, 1 1/2-
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2 Little Giant Traction Shovels.
4 10"x16" 62 1/2 gauge Locomotives (will change
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2 9x14 36" gauge Locomotives.
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4 7x10 Lidgerwood Hoists, with Boilers.
1 100 H. P. Erie Fire-Box Boiler, B. S., 125
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8000 and 10,000-gallon Steel Tanks.

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Three pairs twin Corliss Engines, cylinders 20 by 42. Will sell at sacrifice. Guaranteed in
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1 Mundy 7 by 10 D. C. and D. D. hoisting engine. Cheap to quick buyer. Address

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OF ALL KINDS, FOR ALL PURPOSES



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Two three-drum tandem Lidger-
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One 10x10 cylinder Geared Climax Locomotive, 25 tons; one 17x24 cylinder Baldwin,
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Porter, 36-inch gauge, 8 tons, saddle-tank; one 9x16 cylinder Baldwin, 42-inch gauge, 14
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**10-Ton Steam Roller
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Three wheel type, condition guaranteed.
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Six 7x10 D. C. D. D. Lidgerwood Hoist-
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And Special Work of all kinds
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Four-Wheel, Saddle Tank, 32-ton, 14"x24" cyl-
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Railroad and Contractors Equipment of all
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**ONE REAVES TRACTION ENGINE
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Twenty-five horse-power, cross-compound,
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Capacity Six Yards

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**Air Compressors in First-Class Condition
FOR SALE**

1 Laidlaw-Dunn-Gordon Two-stage,
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Light Revolving Shovels

For many requirements such as road and street construction,
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Operated entirely by one man. Swinging in complete circles in
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(DUMPED BY AIR OR HAND)

Only AIR DUMP CAR under absolute control of operator. Can be brought back to upright position, after passing center of gravity, before entire contents of car have been unloaded. This admits of equal distribution of material on both sides of track. Write THE WM. J. OLIVER MFG. CO., KNOXVILLE, TENN., AND 50 CHURCH ST., NEW YORK, N. Y.

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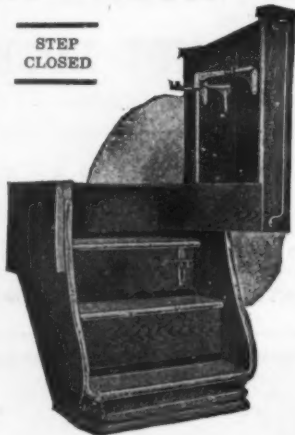


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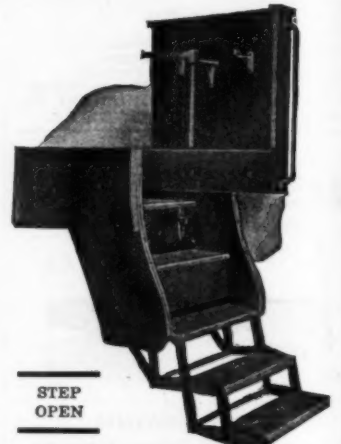
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Blake Extension Car Step

Can be attached to any ordinary car step. Lowered when train stops and closed on starting, by simple mechanism on the platform. You can't let it down when train is in motion. Step goes up by closing trap door, by pressing foot on end of rod or by pressing rod with the hand while standing on ground. Step also closes if train moves three feet backward or forward, should the conductor neglect to close it. If anyone is standing on steps when train starts, step automatically unlocks and moves an inch or two, warning the person to get off. The step then closes when the person gets off, either to leave or get on the train.

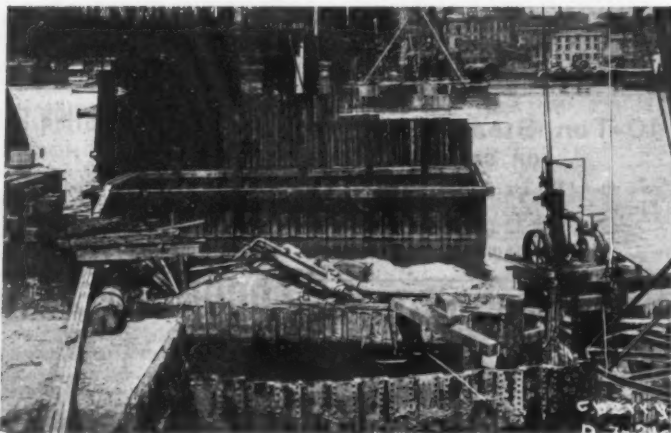
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Accompanying illustration shows Symmetrical Interlock Channel Bar Piling driven for Cherry Street Bridge, Toledo, Ohio.

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LOCOMOTIVES—Narrow and Standard Gauge. 150 Locomotives at our shops 6 to 80 tons. Freight and Passenger Cars. Largest Stock Locomotives in United States

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Passenger Coaches

Five, from 50' to 52' body. Seat 60 to 64 persons. Partitions for separation of the races. High-back seats. Good-sized windows. Also four cheaper coaches, 48' body, seating 62 persons. Specifications on request.

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FOR SALE Relaying Steel Rails

175 tons, 56 lbs. per yard, with plates.
2000 tons, 65 lbs. per yard, with plates.

NEW STEEL RAILS, with Fastenings
All Weights

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FROGS, SWITCHES, SWITCH STANDS, RAIL BRACES.

Bonzano Rail Joints.

Make Better Track. Reduce Expense.
Millions In Use.

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The only composite tie on earth that has proven a success under five and six years actual traffic conditions of the heavy kind.

The only rail fastener that will hold rails in position and true to gauge indefinitely.

Fewer parts to look after than in any other tie. Practically nothing to work loose or get out of order.

No tie plates necessary; nothing to corrode except four screw spikes that are almost instantly removed and replaced without disturbing the tie, and that, too, after many years of use.

Patented everywhere. Investigate.

Write for information and testimonials and for our special prospectus.

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NEW ORLEANS

Relaying Steel Rails

(20-lb., 30-lb., 40-lb., 56-lb. and 60-lb.) Advantageously located for Southern delivery; also other weights heavy section RELAYING RAILS, in different sections of the country; and NEW STEEL RAILS, all weights. We handle only first-class Relaying Rails, and do not select them from scrap. We buy Rails fit to relay, and pay spot cash.

ROBINSON & ORR, Pittsburgh, Pa.
Low Prices on New FROGS and SWITCHES.

10,000 TONS

RELAYING RAIL

56, 60, 70 lbs. per yard.

PROMPT SHIPMENTS

NEW FROGS AND SWITCHES,
SPIKES, BOLTS,

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PHILADELPHIA-NEW YORK

Yards—Williamsport, Pa.

LIGHT STEEL RAILS 12, 16, 20, 25, 30

SPICES AND ANGLE JOINTS
SPIKES FOR ALL SECTION RAILS

Shipment from stock. Manufactured by THE WEST VIRGINIA RAIL CO. Mills and General Office, Huntington, W. Va. The Joseph Schonthal Iron Co., Columbus, Ohio, General Sales Agent.

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12, 16, 20 and 25-lb. Sections. Also
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Rails are first quality. A. S. C. E.
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Prompt Shipments from Stock

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FROGS, SWITCHES, STANDS

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Special Track Work of Every

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FOR SALE

8-54-ton 10-wheelers, 1-40-ton 8-wheeler,
1-32-ton 4-wheel switcher.

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RAILS

We have in stock 250 tons 56-lb. Steel Relayers. 30 tons 25-lb. Steel Relayers. Low price to move quick.

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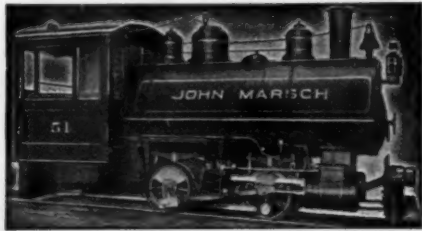
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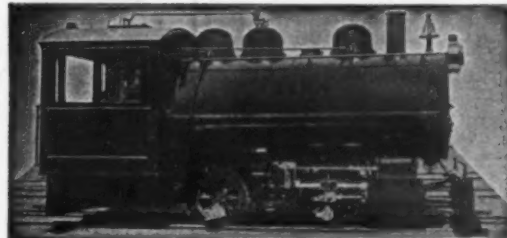
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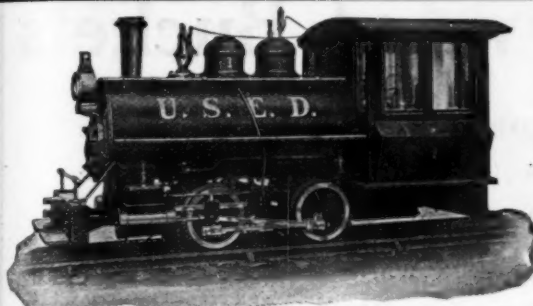
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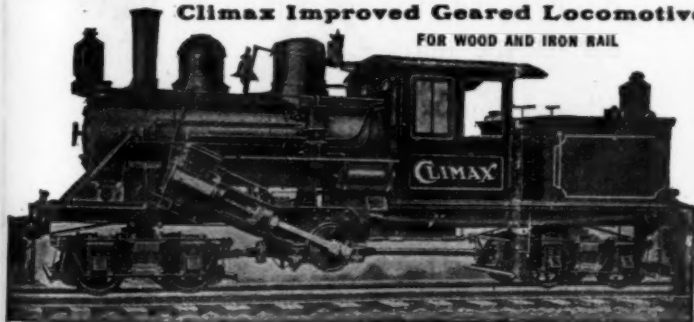
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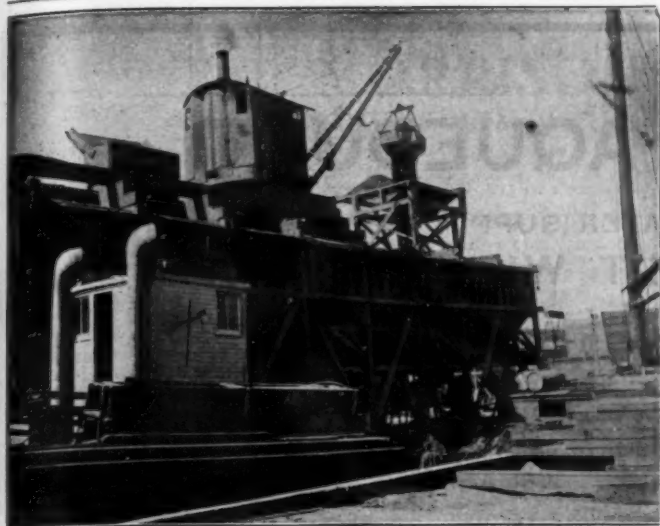
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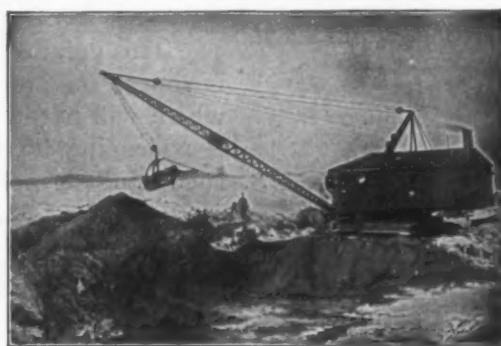
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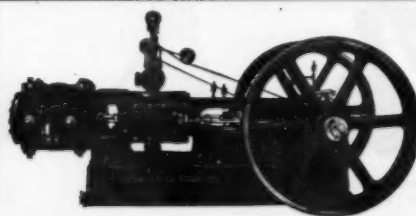
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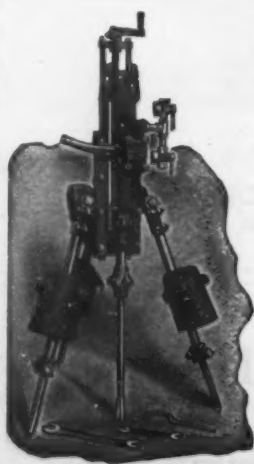
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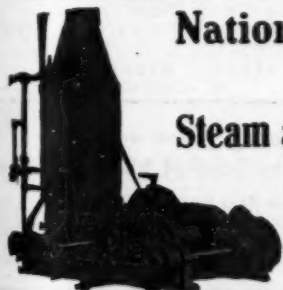
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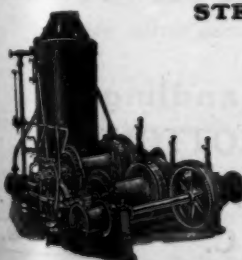
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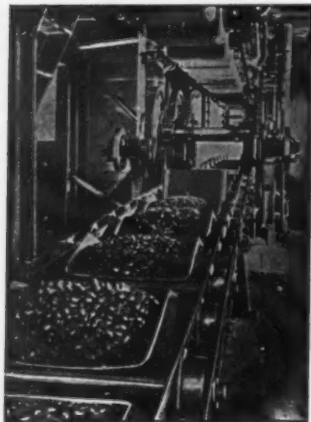
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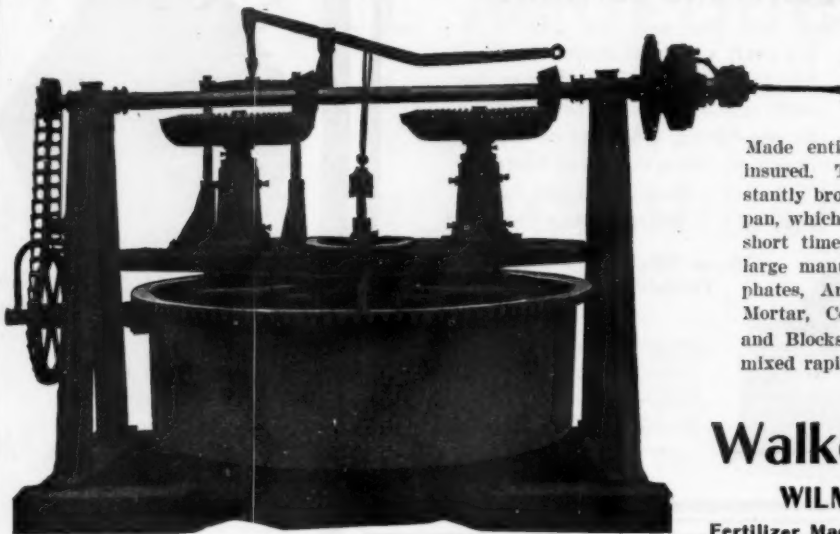
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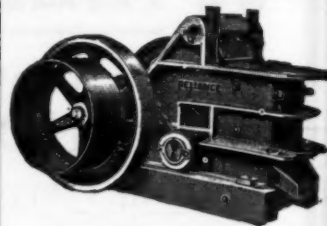
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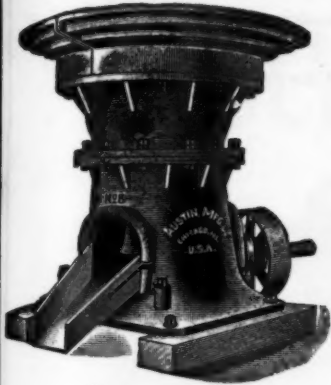
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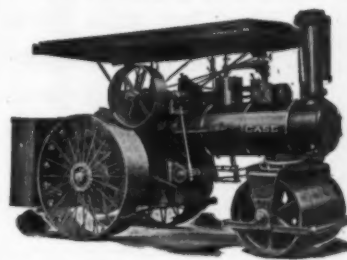
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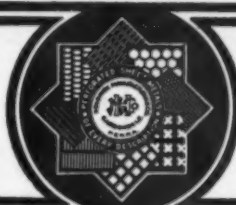
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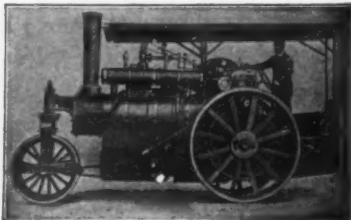
The Troy Wagon Works Co.

106 East Race St., TROY, OHIO

THE KELLY-SPRINGFIELD
ROAD ROLLER CO.

SPRINGFIELD

OHIO



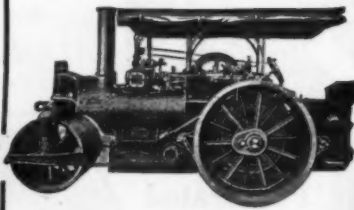
ROAD ROLLERS

ALL TYPES
ALL SIZES

SEND FOR CATALOGUE

Buffalo Pitts Rollers

BUILT FOR SERVICE



Made in all types and sizes for all purposes
4 to 20 tons

BUFFALO STEAM ROLLER CO.

BUFFALO, N. Y.

The Sales of This Season

Will make another record breaking year for us.
Last year's sales were large, but this year's

"The Biggest Ever"



It is all because the

Eagle Dump Wagon

and Dump Box suit
the users.

Ask for our 1912 Catalogue. It's now ready.

THE EAGLE WAGON WORKS

Auburn, N. Y.

P. S.—It looks now as if the Banner Sales for any city from January to January would be taken by a Southern city. The Eagles suit everywhere.

The Ruggles-Coles PORTABLE HEATING PLANT

For Modern Bituminous Pavements

Capacity—1200 to 1500 square yards of 2-inch surface per day

Town and city officials, paving companies, road contractors, engineers and all others interested in building and maintaining the best and most economical streets and roadways will profit by knowing the actual work of this machinery, and we will be glad to furnish all the necessary information.

Ruggles-Coles Engineering Co. 50 Church Street, NEW YORK
McCormick Building, CHICAGO

INDESTRUCTIBLE SIGNS

For all country road, street, outdoor advertising, railroad, posted estates, and mill purposes. The letters are cut into iron 1-16" deep, and the finished sign has a galvanized surface and black letter. On wood the sign shows any combination of colors. The signs are made by a new automatic machine which reduces cost one-half. Any size from 3/4"x6" to 12"x48". The only sign that will last a hundred years. Send for sample letter and advise for what purpose you will use sign.

INDESTRUCTIBLE SIGN COMPANY,

BISHOPVILLE, S. C.

We are SPRING SPECIALISTS. You should know us.

SPRINGS OF
Flat,
Round
and
Square
Wire

All Shapes and Styles
High Grade Machinery Springs

SPRINGS OF
Steel
Brass
Music Wire
Phosphor Bronze
Etc.



Raymond Mfg. Co., Ltd., Corry, Pa.

WAINWRIGHT GALVANIZED STEEL CORNER BAR

"WAINWRIGHT PATENTS"

March 9, 1897
November 22, 1898
May 5, 1903
March 26, 1907
August 29, 1907
August 2, 1910

For Protecting Edges of Concrete Curbs, Steps, Columns, Etc.

This bar is SELF-ANCHORING, the DOVETAILED WEB holding it firmly in place EVERY INCH OF ITS LENGTH, requiring no clips, bolts or wires at intervals, allowing buckling or expansion, causing loosening of curved plates or other devices, which form no permanent protection to the curb. This bar presents a RESISTING DEPTH of nearly AN INCH OF SOLID STEEL, at any possible point of impact, as compared with other devices using seldom more than one-eighth of an inch of resisting surface. It has a record of ten years' use without failure.

This bar has been in public use for more than ten years as the main feature of the

WAINWRIGHT STEEL-BOUND CONCRETE CURB

Absolutely Non-Breakable—Cheaper than Granite
THE BEST IN THE WORLD

OVER THREE MILLION FEET IN USE IN MORE THAN THREE HUNDRED CITIES IN THE UNITED STATES AND FOREIGN COUNTRIES

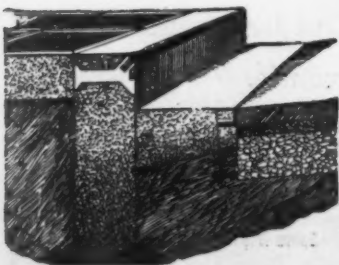
THIS CURB WILL STAND HARDER USE AND LAST TEN TIMES AS LONG AS PLAIN CONCRETE CURBING
CONTRACTORS can make money by laying this curb. CITY ENGINEERS can save money by specifying it.

ARCHITECTS are invited to read pages 242-243 "Sweet's Index"

METAL PARTS FOR SALE

STEEL PROTECTED CONCRETE CO.

Send for Copyrighted Booklet, No. 7.
REAL ESTATE TRUST BLDG
PHILADELPHIA, PA.



American Ingot Iron CULVERTS

Are Efficient

Are Economical



Culverts of AMERICAN INGOT IRON are today extensively employed by the Government, the various State Highway Departments, and the leading Railways of the country—convincing evidence of their superiority in their class.

These facts notwithstanding, they are low enough in price to be used wherever economy is a factor to be considered.

We shall be pleased to furnish information applicable to your requirements.

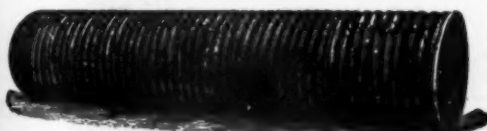


**North Carolina
Metal Culvert Co.**

GREENSBORO, N. C.



These Corrugated Metal Culverts



**STAND THE
STRAIN**

The heaviest loads do not affect them. Carefully made and thoroughly tested before shipped.

Made of "American Ingot" Iron, they cannot rust. They make a permanent installation. They cost less than wood and are safer than their imitators. Used by the biggest railroads and the best road engineers. Write for "Book of Tests."

KENTUCKY CULVERT MFG. CO.

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Manufacturers of

Sewer and R. R. Culvert Pipe

Fire Brick, Milled Clay Flue Pipe and Chimney Tops, Urns, &c.

Correspondence Solicited



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COPELAND-INGLIS SHALE BRICK CO., MFRS.

Office—610 First Nat. Bank Bldg.

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HIGH GRADE PAVING BRICK

Guaranteed to stand 18% standard test

THE CARLYLE PAVING BRICK CO.

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BALFOUR Dressed Granite Blocks

MODERN

ENDORSED BY EXPERTS

Develop phenomenal strength and resistance to wear in official government tests.

Ask for booklet "GRANITE" and The Balfour Specification
THE HARRIS GRANITE QUARRIES CO., - Salisbury, N. C.

Standard Blocks—Flange Blocks



"Acme" Nestable and "Imperial" Riveted CORRUGATED NO-CO-RO METAL CULVERTS FOR EXTRA HEAVY TRAFFIC

WE are equipped, as we believe no other corrugated culvert manufacturing concern is, to supply our ACME NESTABLE and "Imperial" Riveted Culverts of extra heavy gauge No-Co-Ro Metal on reasonably short notice on special order. Note the following table of diameters and special heavy gauges we can furnish in comparison with standard prevailing gauges:

Diameters	Our Standard Gauges	Competitors' Standard Gauges	Special Heavy Gauges We Will Furnish
12-inch	No. 16	No. 16	No. 12
18- "	No. 16	No. 16	Nos. 12 and 10
24- "	No. 15	No. 16	Nos. 12 and 10
30- "	No. 15	No. 16	Nos. 12 and 10
36- "	No. 14	No. 14	Nos. 12 and 10
42- "	No. 14	No. 14	Nos. 12 and 10
48- "	No. 12	No. 14	No. 10

We manufacture our culverts through every process from the making of the molten anti-corrosive No-Co-Ro Metal to the finished article. We are equipped to convert heavy sheet metal into any practical form in accordance with specifications. State your requirements and we will submit our estimates.

THE CANTON CULVERT CO.
SOLE MANUFACTURERS
CANTON, OHIO, U.S.A.

"Saved \$70 on Installation" of 48 ft. 60 in. diameter



2-36" Culverts under 25' fill
Brinson Railway.

American Ingot Iron Corrugated Culvert Pipe

The above was statement of a prominent Engineer M. of W. after figuring the work train cost.

WHY?

Light, easily handled.
Made in solid, continuous lengths as may be specified.
No assembling of short sections on the ground.

PERMANENCY

AMERICAN INGOT IRON is the only iron with a guaranteed analysis. It is 99.94% pure; the purest iron manufactured commercially. This is why it lasts and resists detrimental influences.

This culvert gives perfect service under the lightest and heaviest fills.

Write for Information.

THE DIXIE CULVERT & METAL CO.

ATLANTA, GA.

LITTLE ROCK, ARK.

Main Office—ATLANTA, GA.

American Ingot Iron Road Culverts, Tanks, Roofing and Siding.



Look for the trade mark. It means durability. Don't accept the imitations. We have the proof that our culverts will carry the heaviest loads that travel and will last for years where others fail. Write for Pamphlet A on AMERICAN INGOT IRON and B. on culverts and tanks.

The Tennessee Metal Culvert Co., Nashville, Tennessee.

O. K. HARRY CORRUGATED CULVERT PIPE

(STEEL OR IRON)

For better roads and lower maintenance cost. Serviceable, durable, non-corrosive and simple to install.

Manufacturers also of Corrugated Metal CISTERNs and Storage TANKS.

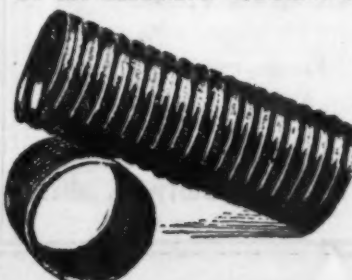
Our new and sanitary Cistern gives health to their users.

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O. K. HARRY STEEL CO.

2340-42 Papin St., St. Louis, Mo.

Factories—St. Louis and Dallas, Tex.



STANDARD Macadam Asphalt Binder



Treating Road with Binder "A." (For description and directions send for our new booklet.)

Standard Macadam Asphalt Binders form a road that is water-proof, solid and durable; a road that keeps an even surface and remains free from dust.

Standard Macadam Asphalt Binder "A"

Between a heavy road oil and a solid binder. Specially suitable for roads that have been stripped of the original surface, and have the top course of stone exposed.

Standard Macadam Asphalt Binders "B" and "C"

Practically solid products, to be incorporated with the road material, either by the penetration or the mixing method. "C" is slightly harder than "B"; for use under warmer climatic conditions.

New Illustrated Book Free

We will mail you free, upon request, our new Standard Road Oil book, 48 pages, profusely illustrated, which contains full directions for the use of our Binders. It also deals fully with our Standard Asphalt Road Oil, Emulsifying Road Oil, etc., and explains the particular uses for which the different oils are prepared. The information it contains will be found invaluable to Supervisors, Road Commissioners, State, County and Municipal authorities, and to owners of private estates.

Standard Oil Company,

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ROAD OIL DEPARTMENT



Summer's Winter Quarters

Come and enjoy all the novel varieties of healthful outdoor life, where it is

Summer from January till December

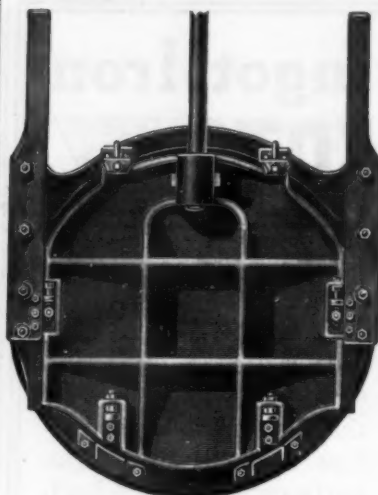
Fresh water and deep-sea fishing. Motoring on hard shell roads. Drives through piney woods. Hunting, sailing, bathing, tennis. Golf on a fine nine-hole course. Ideal climate. Sunny days.

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Right on the beach. 250 outside rooms, with hot and cold running water, telephones, electric lights, and every modern convenience. Cozy, genial, homelike atmosphere. High standard of cleanliness. European plan. Rooms single or en suite, with or without private bath. Prompt and courteous service. Excellent cafe. Seafoods a specialty. Fresh vegetables from our own farm. Artesian water. Reasonable rates.

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ALL STYLES AND SIZES

Hand, hydraulic and electric hoisting mechanism.

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Cast Iron Water and Gas Pipe, Special Castings, Flanged Pipe and Flanged Specials

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FIRE HYDRANTS and STOP VALVES

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MANUFACTURERS OF

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Also Municipal and Building Castings

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All Sizes for Pipe Mills
Gas and Steam Fitters

This cut shows our No. 2A Improved Pipe Threading, Cutting and Nipple Machine. Range $\frac{3}{4}$ to 2, inclusive. Pipe can be gripped or loosened without stopping the chuck, by a simple movement of the lever.

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TAYLOR'S SPIRAL RIVETED PIPE

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for Irrigation, Hydraulic Mining Dredging, Steam Exhaust, Water Supply Lines, etc. Substantially constructed. Fitted with forged steel connections. Hundreds of miles in use. Sizes 3" to 42" diameter.

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Cast Iron PIPE

in all regular sizes, 3 inch to 84 inch

FOR

WATER
GAS

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DRAINS

CULVERTS
Etc.

FLANGED PIPE FLEXIBLE JOINT PIPE
SPECIAL CASTINGS LARGE CYLINDERS
HEAVY CASTINGS

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Trade **"LEADITE"** Mark

Registered U. S. Pat. Office

For Jointing Water Mains

1. **DURABILITY.** Leadite joints increase in strength with age.
2. **NO CAULKING.** Leadite joints require no caulking because the Leadite adheres to the pipe, making a water-tight bond.
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10. **DELIVERY.** We can make prompt shipments.
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12. **USERS.** Progressive water-works all over the country use Leadite.

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IF YOU WANT FIRST-CLASS

SEWER PIPE

MADE OF FIRE CLAY

Send your inquiries to the
CANNELTON SEWER PIPE CO.

CANNELTON, INDIANA

CAST IRON PIPE FOR WATER AND GAS WORKS

McWANE PIPE WORKS

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AMERICAN CAST IRON PIPE CO.

Manufacturers of

CAST IRON PIPE AND FITTINGS



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It Carries More Water For Its Diameter Than Any Iron Pipe

WYCKOFF WOOD PIPE is not impaired by the effects of electrolysis, acid fumes or corrosion. It is light, strong and very durable. Lengths, 6 ft. to 12 ft. long. Size for size, it carries 14% more water than iron pipe.

Costs less for transportation, because it is lighter and easier to handle.

May we send Catalog giving fullest details.

A. WYCKOFF & SON CO.

Established 1855

Elmira,

New York

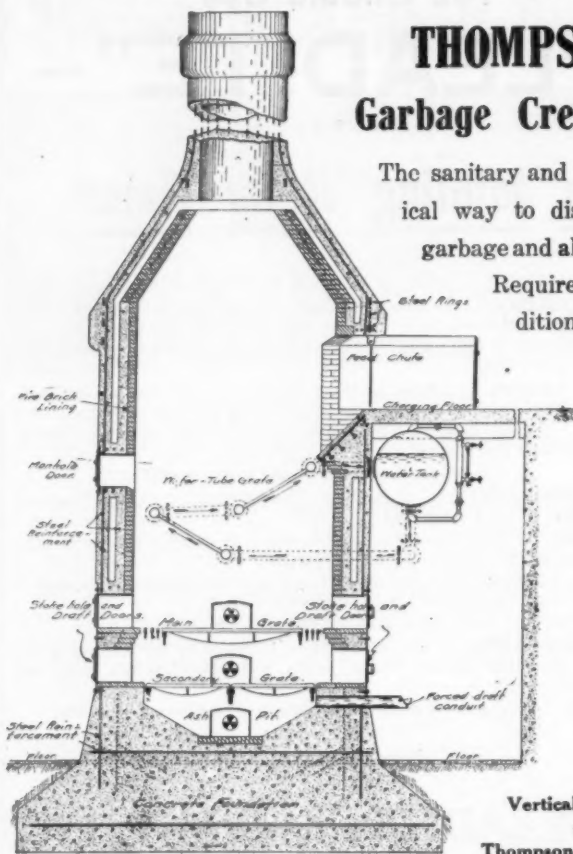
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Oklahoma and Texas Sales Office, 911 Praetorian Bldg., DALLAS, TEXAS

Progressive Cities and Towns Are Successfully Using

THOMPSON Garbage Crematory

The sanitary and economical way to dispose of garbage and all refuse.

Requires no additional fuel.



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Vertical Section
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Thompson Crematory

SPECIALTY ENGINEERING CO., HOUSTON, TEX.

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Safes and Vaults

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DART UNIONS

Have Bronze to Bronze at the
Joint—No Corrosion



This construction is embodied in our
Flange Elbow, Tee, Male and Female and
Air Pump Unions. Ask for circular and
sample.

E. M. DART MFG. CO.
PROVIDENCE, R. I.

THE FAIRBANKS CO., Agents

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All parts inter-changeable—
Most economical and reliable—
Freezing does not injure it as it is self draining.
Send for Latest Price
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Has No Valves—
Cannot wear out—
Pumps Sandy or
dirty water equally
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Independent
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Perfectly
Simple

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RAILROAD STAND PIPES.
RAILROAD TANK VALVES AND TANK
FIXTURES.
FLOAT OR AUTOMATIC INLET VALVE
FOR TANKS.
SWITCH STANDS FOR ALL PURPOSES.
WATER METERS.

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HIGH-GRADE SHALE SEWER PIPE

Thoroughly Vitrified. None Better
Vitrified Wall Coping and other
Clay Products. Annual Capacity
1900 cars.

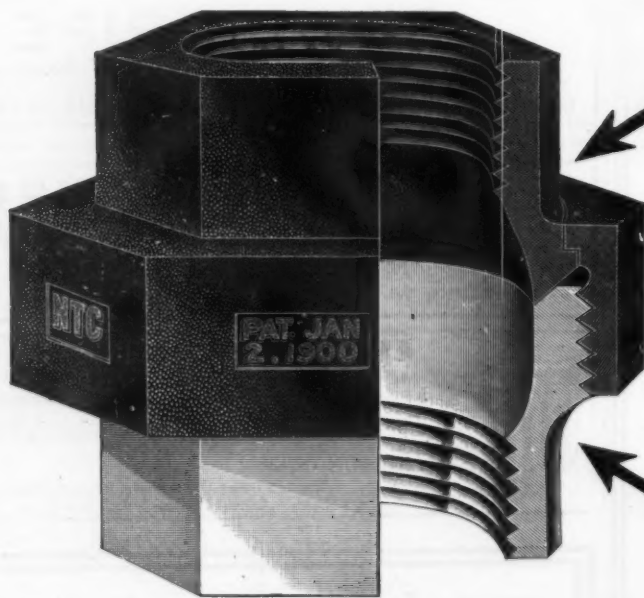
POMONA TERRA-COTTA CO. POMONA, N. C.

Sure you need a VALVE on your feed-water
system to regulate the inflow, and the HYDRO-
MATIC is the one you want. If it don't do all we
claim it will, then send it back at our expense.
For WATER or STEAM, regulates the flow auto-
matically. Let me SHOW you. Loads of infor-
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"The Union With No Inserted Parts."

Railroads Prefer "Kewanee" Unions

¶ The Division Superintendent of an important railroad system recently said to one of our representatives:

"Our men would rather have the 'Kewanee' Union than any other union."

¶ Because railroads use large quantities, all material purchased must measure up to a high standard—mechanical equipment especially.

¶ The railroad system mentioned uses many thousands of "Kewanee" Unions on every division.

¶ The following advantages explain why "Kewanee" Unions are preferred:

(a) Brass to iron thread connection—No corrosion.

(b) Brass to iron ball joint seat—No gasket.

(c) 125 pounds compressed air test under water—No defective fittings.

(d) Solid, three piece construction—No inserted parts.

(e) Easily disconnected—No force required.

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Special

Order a few "Kewanee" Unions for trial.
"Kewanee" Unions and Specialties are carried in stock
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DON'T ACCEPT A SUBSTITUTE—Insist on the "KEWANEE"

Our new booklet, "The Whole Kewanee Family," tells all about
"Kewanee" Unions. A post-card brings it.

Samson Water Turbine

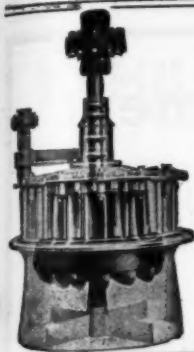
By using BOLTED PLATE COUPLINGS on the upright shafts of our SAMSON instead of JAW CLUTCH COUPLINGS we reduce to a minimum the liability of shafting and gearing getting out of alignment and causing undue wear.

JAMES LEFFEL & CO.

310 Lagonda Street

[7]

Springfield, Ohio, U. S. A.



Take off your Hat to the

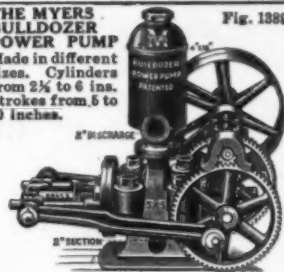
Well Pumps, Power Pumps,
Tank Pumps, Spray Pumps
With Glass Valve Seat
A Line Without an Equal
on the Globe

Write for Circulars and Prices to
F. E. MYERS & BRO.
ASHLAND, OHIO, U. S. A.

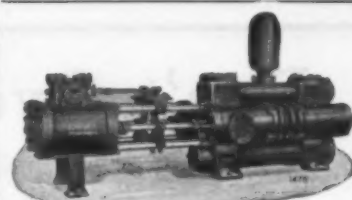
MYERS

The Pump that **PUMPS** **HAY** **BARNDORF**
TOOLS **HANGERS**
HAY RACK
CLAMPS

THE MYERS
BULLDOZER
POWER PUMP
Made in different
sizes. Cylinders
from 2 1/2 to 6 ins.
Strokes from 5 to
20 inches.



THE MYERS BULLDOZER
WORKING HEADS, PUMPING
JACKS, CYLINDERS, ETC.



Duplex Plunger Boiler Feeder.

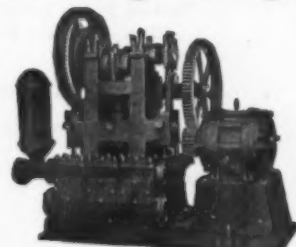
We have produced several new lines of pump patterns, among them are heavy Boiler Feeders and Water Supply Pumps. Write for our Catalogue.

Steel Forged HYDRAULIC PUMPS
Jet and Surface CONDENSERS.

DEAN BROS. **STEAM**
INDIANAPOLIS. **PUMP**
WORKS.

NOT IN THE PUMP TRIBE

Deming Pumps



Deming Triplex Power Pump direct connected to electric motor.

Ask for our general Catalogue of hand, wind-mill, power and spray pumps, or write us your specifications.

The Deming Company
SALEM OHIO
HAND AND POWER PUMPS

GENERAL AGENTS:
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Sydnor Pump and Well Co., Richmond
Dunn Machinery Co., Atlanta
Moore & Handley Hdw. Co., Birmingham
Leib Co., Louisville, Ky.

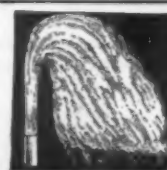
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Hydraulic Engineers.

MANUFACTURERS OF

MCCORMICK TURBINES.

See Illustrated ad. in last and next issues.
Branch Offices—176 Federal St., Boston.
Chicago Office, 644 American Trust Bldg.



Established 1885
No Poisonous Matter
No Stagnant Water
IN DRILLED WELLS
and we drill them.
Write
HUGHES SPECIALTY WELL
DRILLING CO.
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Booklet

TURBINE WATER WHEELS

Highest efficiency
Both CYLINDER and REGISTER gate
Write for catalog

Davis Foundry & Machine Works
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THE POOLE-LEFFEL TURBINE WATER WHEEL



Reasonable price. Unequalled workmanship. Made for a variety of purposes, under various conditions. On the market for 40 years. Special wheels made to order. Let us hear from you.

Poole Engineering & Machine Co.
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ENGINEERS FOUNDERS MACHINISTS
Gears, Castings, Power Transmission Goods

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No. 13 S. 4th St.
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Cook's System of Wells

For Cities, Towns, Villages,
Railroads, Ice Plants, Brew-
eries and Manufactories.

**COOK'S PATENT BRASS TUBE
WELL STRAINER**

**COOK'S DEEP WELL PUMPING
ENGINES**

Estimates furnished upon application.
Write for catalogue and prices.



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For Artesian Water Wells; Oil, Gas and Mineral Test Wells; Blast Holes in Heavy Excavation. A complete line of Traction and Portable Machines, all depths to 2500 feet.



In writing for catalog describe work.

**Keystone Steam Well
Machine Co.**
BEAVER FALLS, PA.

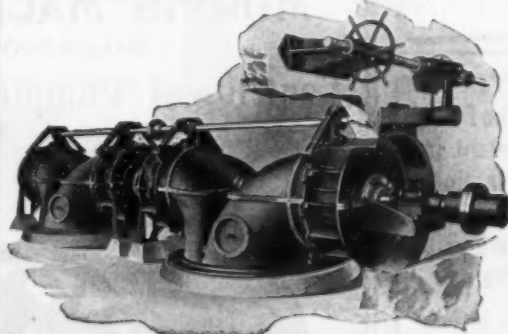
26 YEARS EXPERIENCE DRILLING

Artesian Wells and are equipped for drilling from 100 to 1500 ft. deep, any locality, also

INSTALLING
complete water plants and
ERECTING
steel structures, wooden tanks
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LET US QUOTE YOU

STOTHOFF BROS., Flemington, N. J.
Telephone 94



**New
American
Turbines**

**And Appurtenances Produce Better Results than
any other water-power equipment on the market.**

Many plants owe their constant operation and low maintenance cost to the substantial construction of our machinery.

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THE DAYTON GLOBE IRON WORKS CO.
DAYTON, OHIO

Well Drilling Machines

Over 70 sizes and styles, for drilling, either deep or shallow wells in any kind of soil or rock. Mounted on wheels or on gins or horse powers. Strong, simple, durable. Any mechanic can operate them. Send for catalog.

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L. C. SMITH & BROS. TYPEWRITER
(Ball-Bearing, Long-Wearing)

You owe it to yourself to inspect this NEW MODEL before purchasing a typewriter. It is the latest and best example of what a writing machine should be.

The MODEL FIVE includes every desirable practical device for the convenience of the operator.

It is compact and complete. Ball-bearings throughout make it easy running. More work with less effort.

Even though "hard to suit," this newest model cannot fail to impress you. For the work you want of a typewriter it is without an equal.

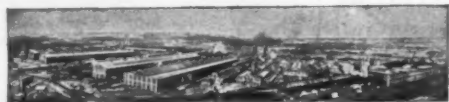
Send for our "Story of the Ball Bearings."

L. C. SMITH & BROS.
TYPEWRITER CO.

SYRACUSE, N. Y. - - - U. S. A.

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Don't Overlook The Pumping Equipment



GENERAL ELECTRIC CO.
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AMERICAN
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PATERSON
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BOTANY WORSTED MILLS
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Typical Plants Using Goulds
Efficient Power Pumps

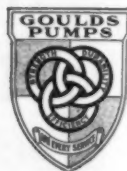
when looking for means of reducing operating costs and increasing the efficiency of your plant.

We can refer you to many plants where pumping costs have been reduced two-thirds or more by adopting

GOULDS EFFICIENT POWER PUMPS

These pumps are in general use in industrial plants and large buildings all over the world, where they were selected because of their high efficiency.

Send for bulletins and information.



THE **GOULDS** MFG. CO.
LARGEST MFR. OF **PUMPS** FOR EVERY SERVICE

59 W. Fall Street

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THE JOHN H. MCGOWAN CO.

BUILDERS OF

SINGLE



DUPLEX



PUMPS

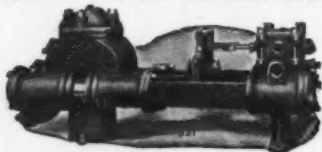
FOR

Mills, Mines, Phosphate Plants, Power Stations and
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BOOKLETS

303

SINGLE PUMPS



PAMPHLETS

313

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CINCINNATI, O.

TRUMP TURBINES

Built in All Sizes and Capacities **Water Power** Machinery to Suit Your Requirements
THE TRUMP COMPANY - - Springfield, Ohio

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ALL SIZES, BELT DRIVEN AND DIRECT CONNECTED

For Irrigation, Tanneries, Mine Drainage, Phosphate Mining,
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MORRIS MACHINE WORKS

BALDWINVILLE, N. Y.

Centrifugal Pumping Machinery and Steam Engines

Specially Designed
PUMPS

FOR

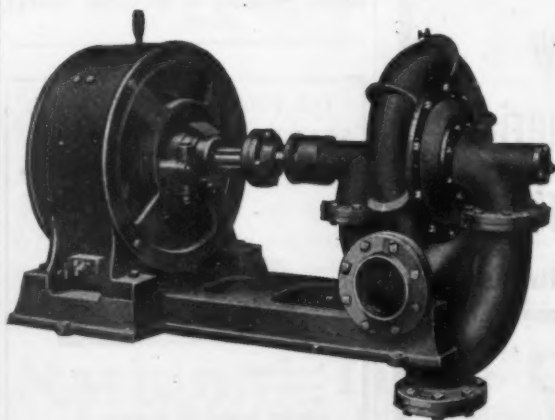
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Rice Irrigation,
Cotton Mills,
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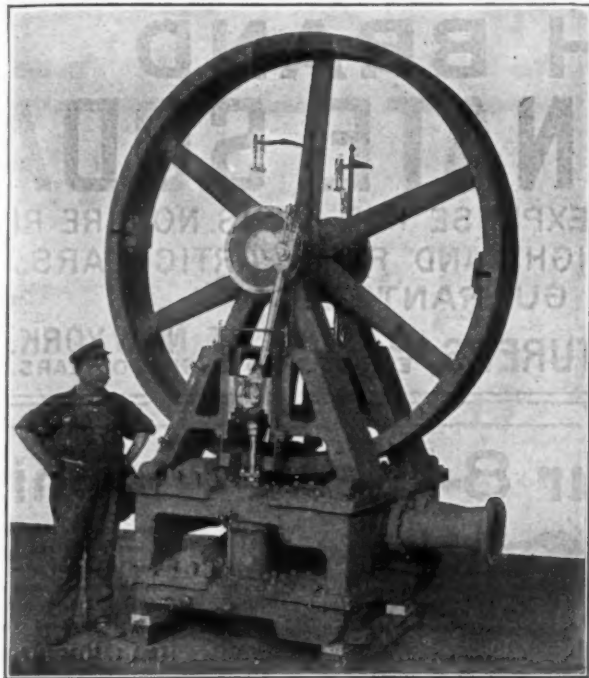
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you want in
a Filtration,
Water or
Sewage
Plant

but can be used
equally as well
in a great many
other places.
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to tell you more
about them and
where we have
them operating.

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Simple—Flexible—Efficient



No gearing. Belt driven from engine, line shaft, motor or water wheel.

We also build **Hamilton Corliss Engines**, Air Compressors, etc. Write for Bulletin G.

The Hooven, Owens, Rentschler Co.
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The Slogan of the Cameron—"Character: The Grandest Thing"

Cameron Pumps

Have No Outside Parts to Cause Trouble

A glance at the cut shows you the simple and compact construction of the Cameron Pump.

Notice the absence of all valve gear or moving parts on the outside—how impossible it is for anything to interfere with the pump giving its best service.

It is a strong pump all the way through; there is nothing delicate about any part of it. And therein lies the reason for the fact that over 60,000 of them are now in satisfactory use; that they have successfully stood the test of hard **service** for half a century, and that today they are considered the **superior** pump the world over.



Catalogue No. 21 sent on request to interested pump users.

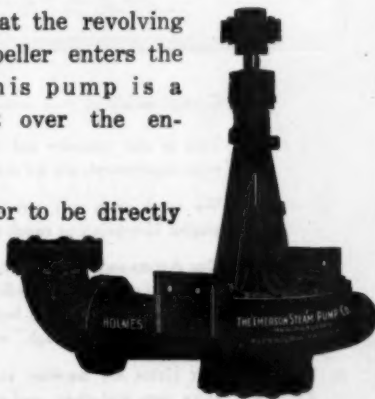
A. S. Cameron Steam Pump Works
Foot of E. 23d St., New York

1-18-12

The Open Impeller OF THE Holmes Centrifugal Pump (HYDRAULICALLY BALANCED)

Prevents rapid wear at the revolving joint, where the impeller enters the suction opening. This pump is a marked improvement over the enclosed-impeller type.

Made for belt drive or to be directly connected to motors, engines or turbines. Adapted to all users. By using this type you get very high efficiency, *which remains high*, at low cost.



Submit your pumping problem.

Send for Bulletin 1-D.

Emerson Steam Pump Co.
ALEXANDRIA, VA.

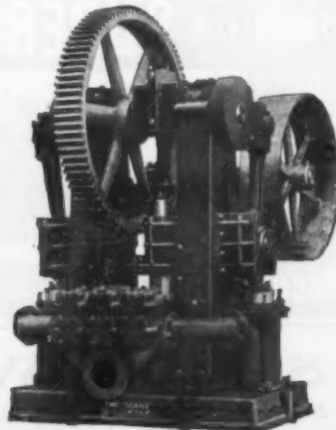
The Thousands of

Deane Pumps

in successful operation throughout the world give **working proof** of the qualities, efficiency and reliability that have made the Deane line famous.

Quality

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Pumps for Tank Service, Elevators, Water Works or General Service. They can be operated by belt, water or motor, and are absolutely dependable under the most severe working conditions.

Bulletin D163-29 will tell you all about them.

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FOR THE PREVENTION OF SAP-STAIN OR BLUING OF LUMBER

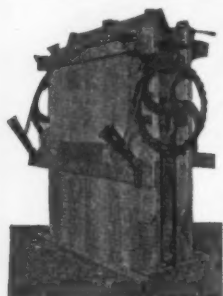


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THE COST IS NOMINAL. NO EXPENSE FOR KILNS. NO FIRE RISK.
WRITE FOR PRICES, FREIGHT AND FULL PARTICULARS.
HIGHEST TEST GUARANTEED.

CHURCH & DWIGHT CO. MANUFACTURERS, 63 WALL ST. NEW YORK.
ESTABLISHED OVER 70 YEARS.

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QUALITY—EFFICIENCY
LOW SPEED—LOW POWER
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BALING PRESSES
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PAPER DEALERS
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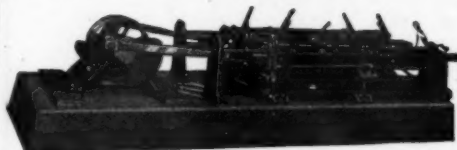
LUMBER STACKERS SOULE STEAM FEEDS

**DOGS, LUMBER
BUGGIES, ETC.**

SOULE STEAM FEED WORKS
MERIDIAN, MISS.

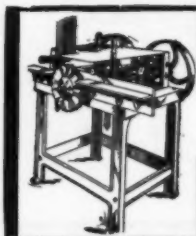
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Our 8-Block Machine



produces finest to coarsest excelsior
with less power and less expense
per ton than any other machine
made; also makes more and better
excelsior. This can be easily
proved. Let us send catalogue.

LEWIS T. KLINE, ALPENA, MICH.



40,000 LATHS PER DAY
ON OUR
IMPROVED LATH MACHINE

Just write us that you saw it and
want to see it saw
CHASE TURBINE MFG. CO., ORANGE, MASS.

Slow Speed, Low Power Blower Systems

STANDARD BLOWER & METAL MFG. CO.

Blow Pipe Engineers

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Problems Are Solved by Us
Every Day

LET US SOLVE YOURS

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General Agents for Virginia and N. Carolina for
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SUPPLIES OF ALL KINDS
SYDNOR PUMP & WELL CO., Inc.
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SMITH STANDS FOR SUPERIORITY

IN MACHINES FOR
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woodworkers, 600 page
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our complete line.



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240 and 249 West 29th St., New York, U. S. A.

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Flat Spiral and
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Our Specialty

Manufacturers of
All kinds of
Round and
Flat Wire
Tempered and
Untempered



SPRINGS
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ROLLING
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Wire Springs of
Every
Description

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Consult us about your catalog illustrations.

This is our specialty and no matter what
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Our Artists and Engravers from long train-
ing have been made to understand that our
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made. "Good Enough" won't do for us.

Our plates are machine etched; they are
extra deep and clean, and will produce the
very best results.

We will be glad to show you their many
advantages—write us.

Yours very truly,

BALTO.-MD. ENGRAVING CO.
BALTIMORE, MD.

**BALTIMORE-MARYLAND
ENGRAVING COMPANY**
28 S. CHARLES ST

LANE

GANG EDGERS

(LIKE LANE MILLS)

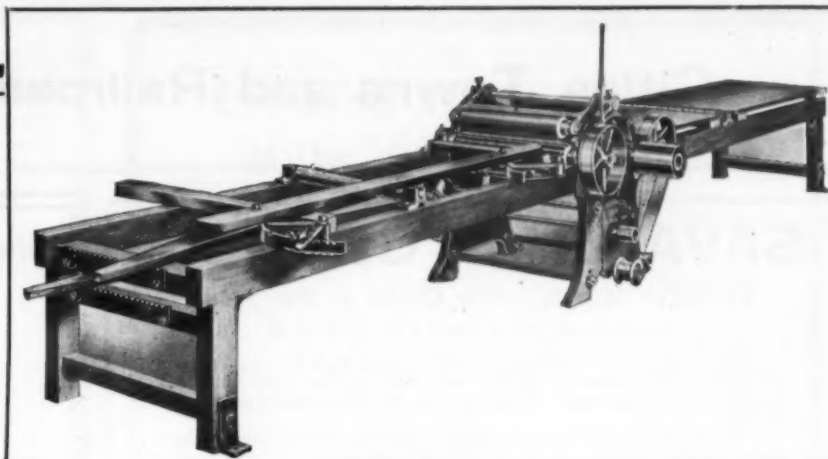
ARE IN A CLASS BY THEMSELVES

The cut shows our 14-inch Gang with three saws

It has several of the best features of our larger and more expensive machines, but we sell it at a surprisingly low price. A bradded roll in the feed-out-table helps this machine to do much more perfect work than what is usually done on small edgers, approaching very closely that done on the best chain-feed machines.

Our Special Edger Catalog
is yours for the asking

LANE MANUFACTURING CO.
MONTPELIER, VERMONT



In Choosing Cutter Heads PRICE IS BUT A FIGURE.

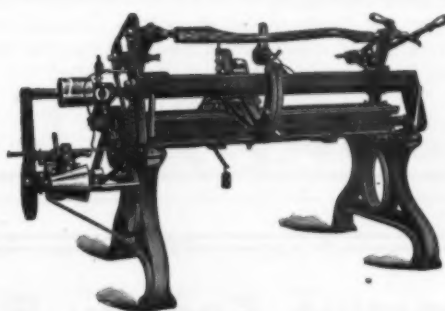
If you buy a CHEAP HEAD, you buy often.

If you buy a GOOD HEAD, it serves as a Permanent Fixture to your Machine.

The Shimer Cutter Head is designed for a purpose which has for its object the direct saving of labor and material. Its construction agrees with the special class of work it is to perform. It is first made to suit the machine—it is next made to suit the work. Every detail is carefully formed to give a free cut—to hold a uniform shape—to be durable. These features establish a permanent make-ready, which demonstrates that this "Best of All Cutter Heads" makes a safe and profitable investment.

In the construction of these tools every improvement is carefully developed, adopted and given to the public at the mere cost of production. That is why they have grown to be popular. Their merit has earned for them a place as permanent in the mills as the hand saw or the wood chisel in the hands of the carpenter. To study them means to appreciate them. Every user of a matcher or moulder should try them 30 days and determine for himself whether or not he can longer afford to be without them. Address

SAMUEL J. SHIMER & SONS,
MILTON, PENNSYLVANIA.



THIS CUT SHOWS THE

No. 1 LATHE

FOR TURNING

**Axe, Pick, Adze, Sledge, Hammer and
Hatchet Handles, Spokes, Whiffletrees,
Gun Stocks, Lasts,**

AND OTHER IRREGULAR WORK

SIMPLE STRONG DURABLE ECONOMICAL

We also manufacture other Lathes for making Handles, Spokes and Variety Work; Sanders, Shapers, Boring and Chucking Machines, Rip Saws, etc., etc.

Complete catalogue and price list free.

THE OBER MFG. CO.

18 Bell Street

Chagrin Falls, Ohio, U. S. A.

Cities, Towns and Railroads Inviting Factories.

SAVANNAH, GEORGIA

Fertilizer Manufacturing Center of the South

AND SIXTH LARGEST CITY IN EXPORTS IN THE UNITED STATES

THE LAND OF OPPORTUNITY. I am now offering factory sites which have access to all four railroads entering Savannah, and situated on the Savannah River, the only available water front near the city.

I have also a few choice farming propositions with railroad and water transportation. Write me for information.

FRANK WHITNEY, Room 207 Germania Bank Bldg., SAVANNAH, GA.

WINCHESTER, VIRGINIA

The Center of the Greatest Apple Development
in the United States

SPECIAL OPPORTUNITIES FOR

Cannery, Evaporating and Preserving Plants; Spray Material, Spray Wagons and Orchard Equipment Plants. Brick Plant wanted. On B. & O and Pa. Rys. Full information furnished.

J. E. Correll, Sec. Business Men's Asso., Winchester, Va.

THE SOUTH'S "GARDEN SPOT" IS TRAVERSED BY THE ATLANTA, BIRMINGHAM & ATLANTIC RAILROAD

Lands are reasonable in price, very fertile and adaptable to the widest range of crops. Splendid climate and excellent church and school advantages. The territory is attracting general attention throughout the country.

Those desiring to locate will do well to communicate early. Inquiries are invited and literature treating fully with the population, soil conditions, etc., will be promptly mailed.

W. H. LEAHY

GENERAL PASSENGER AGENT

ATLANTA, GA.

Attractive Factory Sites

ON THE

ILLINOIS CENTRAL RAILROAD

For full particulars address the undersigned

Free books of information on farm lands issued by the
Illinois Central Railroad

ABOUT THE SOUTH

LOUISIANA RECLAIMED LANDS MAKE
FERTILE FARMS
THE YAZOO MISSISSIPPI VALLEY
LIVE STOCK INDUSTRY IN THE SOUTH
ALFALFA SUCCESSFULLY GROWN IN MISSISSIPPI
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GRENADA COUNTY, MISSISSIPPI
TISHOMINGO COUNTY, MISSISSIPPI
TANGIPAHOA PARISH, LOUISIANA
WEST TENNESSEE

Everyone who would like a Southern home or investment should have a copy of one or all of these books. For free copies address

J. C. CLAIR

Industrial and Immigration Commissioner

ILLINOIS CENTRAL RAILROAD COMPANY

135 Park Row, CHICAGO, ILL.

One Hundred Square Miles of Phosphate in "A Land of Resources"

The Tennessee Central Railroad runs through the center of more than one hundred square miles underlaid with a rich deposit of high-grade Phosphate—enough to supply the world for ages. The deposit is from eighteen to thirty-six inches thick. Analysis shows it as rich as Spanish, French and Tennessee. This discovery was only made in 1906. Therefore, the center of activity of Phosphate mining must necessarily be transferred to this section of Tennessee. This land can now be purchased at practically farm values.

Let me help you to some Rich Phosphate. Address

RUTLEDGE SMITH, Industrial Agent

TENNESSEE CENTRAL RAILROAD

Cookeville, Tennessee

CLAYS IN THE SOUTH

The U. S. Government report shows that the value of brick and tile manufactured from clay in Pennsylvania for 1909 exceeded twenty million dollars.

We can show limitless deposits of superior clay in easy reach of reasonable priced electric power, where transportation facilities offer a very wide distribution.

An ideal location for a large plant. For particulars address

J. A. PRIDE

General Industrial Agent Seaboard Air Line Railway

NORFOLK, VIRGINIA

MANUFACTORIES INVITED

Cheap Electric Power and Labor

Bedford City, Va., offers every advantage to industrial plants generally. Has cheap electric power which is very necessary to profitable manufacturing; has good supply of labor and ample raw material of various kinds within easy reach; and is on railroad connecting with all parts of the country and seaports. Good schools, churches, healthful climate and other facilities and comforts which make it a fine place of residence.

Detailed information gladly given by the

BOARD OF TRADE

BEDFORD CITY, VIRGINIA

The Thriving Towns of Georgia

Offer opportunities and untold advantages for every line of business. Situated in the heart of the great COTTON BELT, in a country that is growing by leaps and bounds and knows no hard times, they offer splendid inducements to merchants, manufacturers, professional men and every man that is willing to work. Correspondence solicited.

Georgia Bureau of Industries & Immigration

714 CENTURY BLDG.,

ATLANTA, GA.

Choice Factory Sites and Farm Lands

ALONG THE

DOUBLE TRACK RICHMOND-WASHINGTON LINE

Equable Climate

Good Schools

Reasonable Labor

Lowest Freight and Passenger Rates

Splendid Transportation Facilities

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Richmond, Fredericksburg & Potomac Railroad,
and Washington Southern Railway.

ASHLAND, VIRGINIA

VIRGINIA
KENTUCKY
TENNESSEE

GEORGIA
No. CAROLINA
So. CAROLINA

To Manufacturers:

Substantial manufacturing concerns, especially those engaged in turning out steel, iron or wood products, requiring new sites and additional capital, will find it to their advantage to communicate with the undersigned.

An important city on the Southern Railway wants more factories, and offers inducements well worthy the consideration of any manufacturing company seeking a new location where there is abundant room, cheap coal, large timber supply, desirable labor, excellent point for distribution of product, and a charming residential place.

We welcome the opportunity to afford further information to responsible concerns. All correspondence and negotiations confidential. Refer to File 11,686. Write or call on

M. V. RICHARDS, Land and Industrial Agent
Southern Ry., Room 52, WASHINGTON, D. C.

FLORIDA
ALABAMA
MISSISSIPPI

SOUTHERN Ry.
Mobile & Ohio
GA. So. & FLA.

Establish YOUR Business at the Base of Supplies

In Montgomery, Chattanooga, Rome, Atlanta, Macon, Columbus, Birmingham and a number of other cities and towns along the Central of Georgia Railway are factory sites which are ideal from every standpoint.

Your Iron, Coal, Coke, Timber and other raw materials are procurable at the lowest cost and in any quantities you need, as you need them, from immense supplies under your hand on every side. Efficient labor is plentiful, and water power abundant and inexpensive.

The prosperous, loyal community round about supplies a home market of great possibilities. Excellent shipping facilities open the whole country for promotion of sales on a successful competitive basis.

The progress that this district has made along industrial, commercial and agricultural lines during the past few years is but an indication of the prosperity that will mark its future. In it is the rational location for your factory. Any information you desire will be sent gladly and promptly upon request.

Address J. M. MALLORY
Savannah, Georgia
INDUSTRIAL AGENT

**CENTRAL OF GEORGIA
RAILWAY**

Equable
Climate

Texas City, Texas

Unlimited
Opportunities

If you are thinking of changing the location of your factory, or if you are thinking of locating a branch plant—then by all means investigate the situation at Texas City, Texas. The established steamship lines operating between Texas City, Mexico and the countries to the South, the transportation lines which tap the vast timber resources of the Southwest and which have their termini at this place, all enable the manufacturer who is located here, conveniently and economically to secure all the various hard and soft woods. These same transportation conveniences put him in direct communication with the markets of the world. A little investigation will disclose the fact that Texas City is

An Excellent Location For a Furniture or Piano Factory

Space forbids a lengthy enumeration of the many opportunities and advantages of this favored section. Statistics and general information will gladly be furnished to interested parties. Address

Texas City Transportation Co.

Texas City, Texas

Abundance of Cheap Power

Along the Clinchfield Route

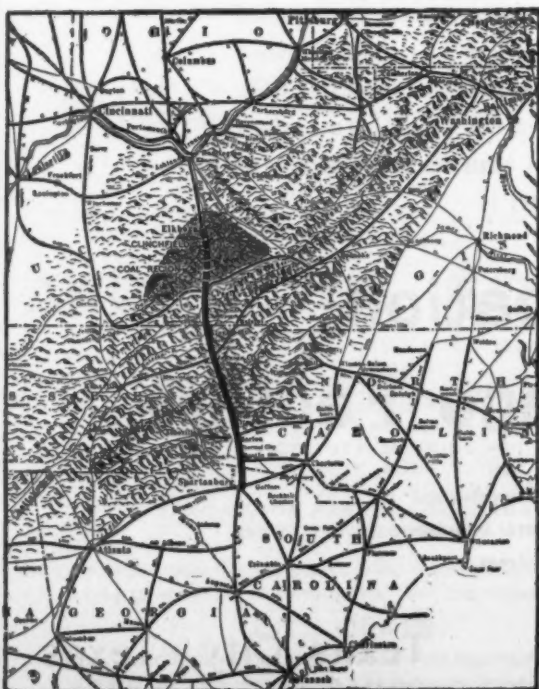
Whether your plant is driven by steam or electricity the Clinchfield can offer you sites where power can be developed at the lowest possible cost.

Throughout that section of the Appalachian South traversed by the Clinchfield are rivers which offer splendid opportunities for hydro-electric developments ranging from 250 H. P. up.

Many of these sites have been especially examined by a hydraulic engineer and reports and maps have been prepared to cover the character of each site, the amount of horse-power available and the approximate cost of construction.

In addition, the enormous coal fields of the Clinchfield Coal Corporation are situated at the north end of the Clinchfield Route, thereby insuring a plentiful supply of high-grade coal at comparatively low cost. Consequently, a manufacturer locating on the Clinchfield Route can obtain an abundance of power at low cost—a most important factor in industrial operations.

To cheap power add the availability of such important raw materials as cotton, hardwoods, various mineral deposits, the products of farm and orchard, abundance of white labor, a most healthful climate and large consuming markets within easy reach, and where can be found more ideal conditions for economical and profitable manufacture?



Detailed information regarding industrial locations will be gladly furnished. Send for our booklet, "The Land of Opportunities," which outlines the resources of the remarkable country along the Clinchfield Route.

Carolina, Clinchfield & Ohio Rwy.

"THE ROAD OF OPPORTUNITY"

J. J. Campion,
V.-P. and Traffic Manager

R. F. Brewer,
Industrial Agent

Johnson City, Tenn.

Glass Sands of West Virginia

Exceptional Purity

Extensive Supply

The glass sands of West Virginia are noted for their exceptional purity and adaptability to the manufacture of the finest grade of products.

In 1909 the output from its glass sand deposits was 170,000 tons, and while West Virginia was the third State in amount of production, it was second in value of output, thus bearing out the claims made for its purity.

West Virginia also possesses large deposits of practically chemically pure limestones and an abundance of natural gas.

Consequently there is found within its borders all of the principal raw materials and cheapest fuel for the operation of glass industries.

These statements are borne out by reference to the report of the West Virginia Geological Survey, which states:—

"West Virginia, on account of its natural gas fuel, has become one of the leading glass manufacturing States, and these plants are scattered all through its natural gas district. In the State is found one of the purest limestones in the country, which is especially crushed at Martinsburg to supply this trade. This State also at a number of places has almost inexhaustible deposits of pure glass sand."

Combine with these requirements a railroad service such as furnished by the Baltimore and Ohio, passing not only through the heart of the glass sand, limestone and natural gas districts of West Virginia, but also reaching into the leading markets East, West and North, and it is readily seen that West Virginia provides an ideal location for glass industries.

The Baltimore & Ohio Railroad, through its Industrial Department, will furnish information and co-operate with those desiring to establish glass industries in West Virginia.

Baltimore & Ohio Railroad

W. W. Wood, Industrial Agent

Baltimore, Md.

Pineapple Canning Should Prove A Successful Industry in Florida

No pineapple grown surpasses the Florida pineapple in quality and lusciousness.

The soil and climate of portions of this State are ideally adapted for producing a perfect fruit of this variety, and Florida pineapples have become known as the standard for quality.

If this fruit were canned in Florida when in a naturally ripened condition, thus retaining the full flavor, which comes only by allowing the fruit to ripen before being pulled, the product would constitute a delicacy for which a nation-wide demand could be created.

Such a demand, however, would necessitate intelligent, broad-gauged marketing, such as was used to create the demand for canned Hawaiian pineapples.

Surely if a fruit grown as far away as Hawaii can be canned, shipped to all parts of this country and marketed with good profits, a similar fruit and one superior in quality raised in this country and close to the best markets in the land, could be made the basis of equally good and profitable undertakings.

The East Coast of Florida can raise an abundance of pineapples to meet any demand that may be created.

In St. Lucie, Palm Beach and Dade Counties alone during the two seasons of 1909 and 1910 nearly 600,000 crates of pineapples were shipped away.

The Florida pineapple is already well known, but the canned Florida pineapple can be made even wider known, because it will be brought to the consumer in the most perfect condition that nature can create.

This suggested opportunity merits careful investigation.

Florida East Coast Railway

J. E. INGRAHAM, Vice-President

ST. AUGUSTINE, FLA.

Further Facts on Packing Plant Openings in Mississippi and Louisiana

In several previous advertisements it has been shown that there are sound reasons why live stock packing plants could be established in Mississippi and Louisiana with every promise of complete success.

Both States possess the soil, climate and other requirements for raising big crops of those very grains and grasses and other fattening stock foods that are needed for producing high grade live stock.

Bearing upon this is the fact that in 1911 Mississippi produced 63,251,000 bushels of corn and Louisiana 47,590,000 bushels, a gain in the 10 year period between 1901 and 1911 of 181% for Mississippi and 164% for Louisiana.

This strikingly emphasizes how Mississippi farmers are more and more every year taking up diversified farming, and turning their attention to other activities that are equally and even more profitable than raising the one crop—cotton.

As shown by those around Natchez, Mississippi, where a prosperous packing plant is located, they heartily welcome the opportunity to engage in cattle raising where there is a nearby market available.

A new era of prosperity was created among the farmers in that territory through the establishment of this plant, and so readily did they take to cattle and hog raising, that about a year after starting the plant had to double its capacity.

The successful working of a thriving packing plant at this one point can be duplicated at a number of well located places in both Mississippi and Louisiana.

The farmers everywhere will be found equally eager to raise the necessary cattle and hogs to keep the plant busy.

The packing plant industry is going to be a steadily growing one in the South, due both to the great consumption of such products, practically all of which are now brought in from the outside, and the possession of every requirement for conducting the industry successfully.

The best of these opportunities will be secured by those who take advantage of them early.

It would be well, therefore, to investigate the situation now, especially the openings in Mississippi and Louisiana.

*Write us
for further
information
regarding these
possibilities
in the South.*

Illinois Central Railroad
Chicago, Ill.

*J. C. Clair,
Industrial
and
Immigration
Commissioner,
Chicago, Ill.*

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Abrasive Material Co., Philadelphia, Pa.
Carborundum Co., Niagara Falls, N. Y.
Norton Co., Worcester, Mass.
Vitrified Wheel Co., Westfield, Mass.
- Accountants.**
Baltimore Audit Co., Baltimore, Md.
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Neville, Chas., Savannah, Ga.
- Adding Machines.**
Adder Machine Co., Wilkes-Barre, Pa.
Burroughs Adding Machine Co., Detroit, Mich.
- Agents. (Manufacturers.)**
Allen, Herbert F. L., Washington, D. C.
- Agricultural Implements.**
Appomattox Iron Wks. & Sup. Co., Petersburg, Va.
Myers & Bro., F. E., Ashland, O.
- Air Compressors. (Stationary and Portable.)**
Allen, Herbert F. L., Washington, D. C.
American Air Compressor Wks., New York, N. Y.
American Compressor & Pump Co., Baltimore, Md.
Blaisdell Machinery Co., Bradford, Pa.
Chicago Pneumatic Tool Co., Chicago, Ill.
Gardner Governor Co., Quincy, Ill.
General Electric Co., Schenectady, N. Y.
Ingersoll-Rand Co., New York, N. Y.
Union Steam Pump Co., Battle Creek, Mich.
- Air Motors.**
Ingersoll-Rand Co., New York, N. Y.
- Aluminum Products. (Bars, Sheets, Tubes, etc.)**
Aluminum Company of America, Pittsburgh, Pa.
- Aluminum Wheels.**
Morton Company, Worcester, Mass.
- Anti-Friction Metals.**
Bailey-Leiby Co., Charleston, S. C.
Dodge Manufacturing Co., Mishawaka, Ind.
Gilbert & Sons Brass Fdry. Co., A. St. Louis, Mo.
Phosphor-Bronze Smelting Co., Philadelphia, Pa.
Virginia Railway Supply Co., Norfolk, Va.
- Architects.**
Anderson, Olin & Shepherd, Richmond, Va.
Cottrill & Cottrill, Greenwood, S. C.
Lockwood, Greene & Co., Boston, Mass.
McLaughlin & Johnson, Lynchburg, Va.
Milburn, Helster & Co., Washington, D. C.
Nichols, Charles H., New York, N. Y.
Northrup, Willard U., Winston-Salem, N. C.
Pettit & Cave, Danville, Va.
Shand & Lafaye, Columbia, S. C.
Sirtine, J. E., Greenville, S. C.
- Architects' Supplies.**
Keuffel & Esser, Hoboken, N. J.
Starrett Co., L. S., Athol, Mass.
Weber & Co., F., Philadelphia, Pa.
- Architectural Iron and Sheet Metal Work.**
Bolles Iron & Wire Works, J. E., Detroit, Mich.
Chesapeake Iron Works, Baltimore, Md.
Des Moines Bridge & Iron Co., Des Moines, Ia.
Schreiber & Sons Co., The L., Cincinnati, O.
Snead Architectural Iron Works, Louisville, Ky.
- Art Glass.**
Blawiegar & Co., Memphis, Tenn.
- Art Glass and Prisms. (Set in Zinc and Copper.)**
Spies Art Glass Co., G. A., St. Louis, Mo.
- Asbestos.**
Carolina Portland Cement Co., Charleston, S. C.
Johns-Manville Co., H. W., New York, N. Y.
Southern Pipe Covering Co., Inc., Richmond, Va.
- Asphalt.**
Arncliffe Mfg. Co., Richmond, Va.
Barber Asphalt Paving Co., Philadelphia, Pa.
Gulf Redding Co., Pittsburgh, Pa.
Texas Co., The, New York, N. Y.
- Asphalt Melters.**
Stuebner Iron Works, G. L., Long Island City, New York, N. Y.
- Asphalt Roofing and Siding. (Bird Sand and Chipped Slate Surfaced.)**
Birmingham & Seaman Co., Chicago, Ill.
- Automatic Buckets.**
Browning Engineering Co., Cleveland, O.
- Automobiles. (Pleasure.)**
Interstate Automobile Co., Muncie, Ind.
- Automobiles. (Motor Trucks.)**
Schacht Motor Car Co., Cincinnati, O.
- Axles. [See Car Wheels, Axles and Trucks.]**
- Babbitt Metal. [See Anti-Friction Metal.]**
- Badges. (Hat and Breast, Electric and Steam Road, Police and Fire Dept.)**
American Railway Supply Co., New York, N. Y.
- Bakers' Machinery.**
Lynn Superior Co., The, Cincinnati, O.
- Bankers and Brokers.**
Baltimore Trust Co., Baltimore, Md.
Barr, J. H. Co., Philadelphia, Pa.
Delaware Trust Co., Wilmington, Del.
Electric Bond & Share Co., New York, N. Y.
Glenn, W. S., Spartanburg, S. C.
Guaranty State Bank & Trust Co., Dallas, Tex.
Halsey & Co., N. W., New York, N. Y.
Lisman & Co., F. J., New York, N. Y.
Mercantile Trust & Deposit Co., Baltimore, Md.
New First National Bank, Columbus, O.
New York Bond & Share Co., New York, N. Y.
Nuven & Co., J. H., Chicago, Ill.
Savannah Bank & Trust Co., Savannah, Ga.
Southern States Development Co., New York, N. Y.
Violet & Co., Atwood, New York, N. Y.
- Banks.**
First National Bank, Baltimore, Md.
First Nat'l Bank of Key West, Key West, Fla.
First National Bank, Richmond, Va.
Guaranty State Bank & Trust Co., Dallas, Tex.
Merchants National Bank, Baltimore, Md.
New First National Bank, Columbus, O.
National Exchange Bank, Baltimore, Md.
Savannah Bank & Trust Co., Savannah, Ga.
- Bank and Office Railings and Grilles. (Iron.)**
Bolles Iron & Wire Works, J. E., Detroit, Mich.
Buckeye Wire & Iron Works Co., Columbus, O.
Chattanooga Iron & Wire Wks., Chattanooga, Tenn.
Chesapeake Iron Works, Baltimore, Md.
Cincinnati Mfg. Co., Cincinnati, O.
Dow Wire Works, Louisville, Ky.
Dufur & Co., Baltimore, Md.
Dufur, Baggett & Co., Baltimore, Md.
Meyers Mfg. Co., F. J., Hamilton, O.
Ohio Elevator & Machine Co., The, Columbus, O.
- Bank Pictures.**
Ruse & Thompson, Baltimore, Md.
- Bar Benders. (For Bending Reinforcing Concrete Bars.)**
Hunman & Co., D. A., Sandwich, Ill.
- Bar Iron. (Reduced and Galvanized.)**
Carnegie Steel Co., Pittsburgh, Pa.
Metcalf Steel Washer Co., Philadelphia, Pa.
- Bars, Wire, Wire Fabric, etc. (Steel for Concrete-Steel Construction.)**
American Steel & Wire Co., Chicago, Ill.
Cincinnati Iron & Steel Co., Cincinnati, O.
Concrete-Steel Co., The, New York, N. Y.
Concrete Steel Engineering Co., New York, N. Y.
Franklin Steel Co., Franklin, Pa.
Hoffman & Co., R. C., Baltimore, Md.
Jones & Laughlin Steel Co., Pittsburgh, Pa.
Wight & Co., W. N., New York, N. Y.
- Bearings. (Ball.)**
Brets Co., J. S., New York, N. Y.
Hyatt Roller Bearing Co., Newark, N. J.
Standard Roller Bearing Co., Philadelphia, Pa.
- Bearings. (Brass Journal.)**
Gilbert & Sons Brass Fdry. Co., A. St. Louis, Mo.
- Bearings. (Locomotive and Car.)**
Keystone Bronze Co., Pittsburgh, Pa.
- Bearings. (Oilless.)**
North Amer. Metaline Co., Long Island City, N. Y.
- Bearings. (Roller.)**
Hyatt Roller Bearing Co., Newark, N. J.
Standard Roller Bearing Co., Philadelphia, Pa.
- Bells. (Call.)**
Holster-Cabot Electric Co., Boston, Mass.
- Bells and Gongs.**
National Tube Co., Pittsburgh, Pa.
Western Electric Co., New York, N. Y.
- Belted. (Leather, Canvas, Rubber.)**
American Supply Co., Providence, R. I.
Bailey-Leiby Co., Charleston, S. C.
Baltimore Belting Co., Baltimore, Md.
Cameron & Barkerley Co., Charleston, S. C.
Chesapeake Belting Co., Baltimore, Md.
Diamond Rubber Co., Akron, O.
Druid Oak Belting Co., Inc., Baltimore, Md.
Gandy Belting Co., Baltimore, Md.
Ladew, Estate Edward, Glen Cove, N. Y.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
Rosendale-Hedaway B. & H. Co., Newark, N. J.
Ward-Beebe Co., Washington, D. C.
Williams & Sons, L. B., Dover, N. H.
- Belted. (Chain.)**
Bartlett & Snow Co., O. O., Cleveland, O.
Caldwell & Sons Co., H. W., Chicago, Ill.
Jeffrey Mfg. Co., Columbus, O.
Link-Belt Co., Nicetown (Philadelphia), Pa.
Morse Chain Co., Ithaca, N. Y.
- Belt Conveyors.**
Jeffrey Mfg. Co., Columbus, O.
Robins Conveying Belt Co., New York, N. Y.
- Belt Dressing.**
Diamond Rubber Co., Akron, O.
Gandy Belting Co., Baltimore, Md.
Ladew, Estate Edward, Glen Cove, N. Y.
- Belt Fasteners.**
Crescent Belt Fastener Co., New York, N. Y.
- Belt Lacing. [See Belting, Leather, Canvas, Rubber, and Supplies.]**
- Bicarbonate Soda. (Sap Stain Lumber Dip.)**
Church & Dwight Co., New York, N. Y.
- Billets. (Open Hearth.)**
Erie Forge Co., Erie, Pa.
- Blackboards. (Slate.)**
East Bangor Con. Slate Co., The, East Bangor, Pa.
Hower, J. K., Watlington, N. Y.
Johnson, E. J., New York, N. Y.
- Block Tackle. (For Wire or Manila Rops.)**
Patterson Co., W. W., Pittsburgh, Pa.
- Blowers and Exhaust Fans.**
American Blower Co., Detroit, Mich.
Buffalo Forge Co., Buffalo, N. Y.
Clark Co., Geo. F., Windsor Locks, Conn.
De Laval Steam Turbine Co., Trenton, N. J.
General Electric Co., Schenectady, N. Y.
Green Fuel Economizer Co., Mattawan, N. Y.
Raymond Bros. Impact Pulv. Co., Chicago, Ill.
Savannah Blow Pipe Co., Savannah, Ga.
Standard Blower & Metal Mfg. Co., Atlanta, Ga.
Sturtevant Co., B. F., Hyde Park, Mass.
- Blueprint Apparatus.**
Keuffel & Esser, Hoboken, N. J.
- Boilers.**
Abendroth & Root Mfg. Co., Newburgh, N. Y.
Ames Iron Works, Oswego, N. Y.
Babcock & Wilcox Co., New York, N. Y.
Brownell Co., Dayton, O.
Cameron & Barkerley Co., Charleston, S. C.
Casey-Hedges Co., Chattanooga, Tenn.
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.
Chicago House Wrecking Co., Chicago, Ill.
Cole Mfg. Co., H. D., Newnan, Ga.
Cooper Co., C. G., Mt. Vernon, O.
Gem City Boiler Co., Dayton, O.
Gibbs Machinery Co., Columbia, S. C.
Hartley Boiler Works, Montgomery, Ala.
Heine Safety Boiler Co., St. Louis, Mo.
Keeler Co., E., Williamsport, Pa.
Lookout Boiler & Mfg. Co., Chattanooga, Tenn.
Lombard Iron Works, Augusta, Ga.
Mecklenburg Iron Works, Charlotte, N. C.
Murray Iron Works Co., Burlington, Ia.
Oil City Boiler Co., Oil City, Pa.
Petroleum Iron Works Co., Sharon, Pa.
Phoenix Iron Works Co., Meadville, Pa.
Price Machinery Co., S. M., Norfolk, Va.
Ruemml-Dawley Mfg. Co., St. Louis, Mo.
Schmidt & Sons Co., J. S., Macon, Ga.
Smith-Courtney Co., Richmond, Va.
Southern Engine & Boiler Works, Jackson, Tenn.
Union Iron Works Co., Selma, Ala.
Valk & Murdock Iron Works, Charleston, S. C.
Vogt Machine Co., Henry, Louisville, Ky.
Walsh & Weldner Boiler Co., Chattanooga, Tenn.
- Boiler Setting.**
Harbison-Walker Refractories Co., Pittsburgh, Pa.
- Boiler Tubes. [See Tubes, Boiler.]**
- Bolts, Nuts, Rivets, Studs and Washers.**
Milton Mfg. Co., Milton, Pa.
Nicetown Plate Washer Co., Philadelphia, Pa.
Oliver Iron & Steel Co., Pittsburgh, Pa.
Republic Iron & Steel Co., Youngstown, O.
- Bonds. (Surety, etc.)**
Fidelity & Deposit Co., Baltimore, Md.
- Boring. (Cylinder.)**
Strickland Machine Co., Richmond, Va.
- Bottling Outfits.**
Vilter Mfg. Co., Milwaukee, Wis.
- Box Shooks.**
Naylor & Co., S. E., Gulfport, Miss.
- Brass Goods.**
Bailey-Leiby Co., Charleston, S. C.
Buckeye Iron & Brass Works, Dayton, O.
Powell Co., Wm., Cincinnati, O.
- Brazings. (Cast Iron.)**
Richmond Machine Works, Inc., Richmond, Va.
Strickland Machine Co., Richmond, Va.
- Brass Railings and Grilles, etc.**
McKenna Bros. Brass Co., Pittsburgh, Pa.
- Brewers' Machinery.**
Vilter Mfg. Co., Milwaukee, Wis.
- Brick. (Building.)**
Am. Enamelled Brick & Tile Co., New York, N. Y.
Brookhaven Pressed Brick & Mfg. Co., Brookhaven, Miss.
Carolina Portland Cement Co., Charleston, S. C.
Flake & Co., Inc., New York, N. Y.
Hood, B. Mifflin, Atlanta, Ga.
Hydraulic Press Brick Co., St. Louis, Mo.
O'neale Brick & Tile Co., Milledgeville, Ga.
Pittsburgh-Buffalo Co., Pittsburgh, Pa.
Sibley-Menge Brick & Coal Co., Birmingham, Ala.
- Brick. (Blast Furnace, Coke Oven.)**
Ashland Fire Brick Co., Ashland, Ky.
Hood, B. Mifflin, Atlanta, Ga.
- Brick. (Enamelled.)**
Amer. Enam. Brick & Tile Co., New York, N. Y.
- Brick. (Fire Clay.)**
Ashland Fire Brick Co., Ashland, Ky.
Brookhaven Pressed Brick & Mfg. Co., Brookhaven, Miss.
- Brick. (Inc.)**
Flake & Co., Inc., New York, N. Y.
- Brick. (Refractories.)**
Harbison-Walker Refractories Co., Pittsburgh, Pa.
Kilian Fire Brick Works, Killian, S. C.
Louisville Fire Brick Works, Highland Park, Ky.
Pomona Terra-Cotta Co., Pomona, N. C.
Stevens' Sons Co., H. W., Macon, Ga.
Taylor Sons Co., Chas., Cincinnati, O.
Union Mining Co., Mt. Savage, Md.
- Brick. (Magnesia.)**
Harbison-Walker Refractories Co., Pittsburgh, Pa.
- Brick. (Paving.)**
Carlyle Paving Brick Co., Portsmouth, O.
Copeland-Ingles Shale Brick Co., Birmingham, Ala.
- Brick. (Silica.)**
Harbison-Walker Refractories Co., Pittsburgh, Pa.
- Brick and Clayworking Machinery and Supplies.**
Carnell, George, Philadelphia, Pa.
Fennholtz Brick Machinery Co., St. Louis, Mo.
Freese & Co., E. M., Gallon, O.
Gibbs Machinery Co., Columbia, S. C.
Scott-Madden Iron Works, Keokuk, Iowa.
Steele & Sons, J. C., Stearns, N. C.
Taplin-Rice-Clerkin Co., Akron, O.
- Brick Fireplaces. [See Fireplaces, Artistic Brick.]**
- Brick Machinery. (Sand Lime.) [See Sand-Lime Brick Machinery.]**
- Brickwork. (Artistic.)**
Flake & Co., Inc., New York, N. Y.
- Bridges. (Concrete.)**
Concrete Steel Engineering Co., New York, N. Y.
Roanoke Bridge Co., Roanoke, Va.
- Bridges. (Rolling Lift.)**
Scherzer Rolling Lift Bridge Co., Chicago, Ill.
- Bridges.**
American Bridge Co. of New York, New York, N. Y.
Belmont Iron Works, Inc., Philadelphia, Pa.
Chicago Bridge & Iron Wks., Chicago, Ill.
Des Moines Bridge & Iron Co., Des Moines, Ia.
Farris Bridge Co., Pittsburgh, Pa.
Missouri Val. B'dge & Iron Co., Leavenworth, Kan.
Roanoke Bridge Co., Roanoke, Va.
Scherzer Rolling Lift Bridge Co., Chicago, Ill.
Vincennes Bridge Co., Vincennes, Ind.
Virginia Bridge & Iron Co., Roanoke, Va.
York Bridge Co., York, Pa.
- Bridge and Structural Iron Paints.**
Carolina Portland Cement Co., Charleston, S. C.
Chattanooga Portland Cement Co., Chattanooga, Tenn.
Detroit Graphite Co., Detroit, Mich.
Dixon Crucible Co., Joseph, Jersey City, N. J.
Standard Paint Co., New York, N. Y.
- Brimstone.**
Union Sulphur Co., New York, N. Y.
- Briquetting Machinery. (Coal, Lignite, Ore.)**
Devillers, Robert, Brooklyn, N. Y.
- Buckets. (Excavators.)**
Browning Mfg. Co., Mansfield, O.
Hayward Co., New York, N. Y.
Moulton Mfg. Co., Chicago, Ill.
Owen Bucket Co., Cleveland, O.
Stuebner Iron Works, G. L., Long Island City, New York, N. Y.
Williams Co., The G. H., Cleveland, O.
- Buckets. (Ore, etc.)**
Brown Holsting Mch. Co., Cleveland, O.
Browning Mfg. Co., Mansfield, O.
Caldwell & Son Co., H. W., Chicago, Ill.
Dodge Manufacturing Co., Mishawaka, Ind.
Hayward Co., New York, N. Y.
Link-Belt Co., Nicetown (Philadelphia), Pa.
Owen Bucket Co., Cleveland, O.
Smith Co., T. L., Atlanta, Ga.
Williams Co., The G. H., Cleveland, O.
- Buhr Stones.**
Starr Co., B. F., Baltimore, Md.
- Builders and Contractors.**
Falls City Construction Co., Louisville, Ky.
Farris Bridge Co., Pittsburgh, Pa.
Ferro Concrete Construction Co., Cincinnati, O.
Lisle-Dunning Const. Co., Oklahoma City, Okla.
Seiden-Breck Construction Co., St. Louis, Mo.
White & Co., J. G., New York, N. Y.
- Buildings. (Financed and Erected.)**
Falls City Construction Co., Louisville, Ky.
Gulf Coast Construction Co., Houston, Tex.
Lisle-Dunning Const. Co., Oklahoma City, Okla.
- Building Supplies.**
Armstrong Mfg. Co., Richmond, Va.
Carolina Portland Cement Co., Charleston, S. C.
Chicago House Wrecking Co., Chicago, Ill.
Southeastern Lime & Cement Co., Charleston, S. C.
Southern Building Material Co., Norfolk, Va.
- Burial—Inserted Roofing and Siding. (Flexible Cement.)**
Birmingham & Seaman Co., Chicago, Ill.
- Burners. (Oil.) [See Fuel Oil Equipments.]**
- Bushings. (Oilless. For Loose Pulleys.)**
North Amer. Metaline Co., Long Island City, N. Y.
- Cables.**
American Steel & Wire Co., Chicago, Ill.
Broderick & Bascom Rope Co., St. Louis, Mo.
Roebbing's Sons Co., John A., Trenton, N. J.
Williamsport Wire Rope Co., Williamsport, Pa.
- Cableways. (Overhead Suspension.)**
Broderick & Bascom Rope Co., St. Louis, Mo.
Flory Mfg. Co., S. Bangor, Pa.
Lidgerwood Mfg. Co., New York, N. Y.
Mead-Morrison Mfg. Co., Cambridgeport, Mass.
Roebbing's Sons Co., John A., Trenton, N. J.
- Can and Box Making Machinery. (Tin.)**
Bliss Co., E. W., Brooklyn, N. Y.
- Cans.**
New Orleans Rg. & Metal Wks., New Orleans, La.
Southern Can Co., Baltimore, Md.
- Canning Machinery and Supplies.**
Robins & Co., A. E., Baltimore, Md.
Sinclair-Scott Co., Baltimore, Md.
Syracuse Canning Machinery Co., Chicago, Ill.
- Carborundum Paper and Cloth.**
Carborundum Co., Niagara Falls, N. Y.
- Card Clothing.**
American Supply Co., Providence, R. I.
- Cars. (Dump, Industrial, Logging and Mine.)**
Austin Mfg. Co., Chicago, Ill.
Baldwin Equipment & Supply Co., Chicago, Ill.
Chase Fdry. & Mfg. Co., Columbus, O.
Georgia Car Locomotive Co., Atlanta, Ga.
Hunt Co., C. W., West New Brighton, N. Y.
Males Co., The, Cincinnati, O.
Oliver Mfg. Co., Wm. J., Knoxville, Tenn.
Raleigh Iron Works Co., Raleigh, N. C.
Smith Co., T. L., Atlanta, Ga.
Stuebner Iron Works, G. L., Long Island City, New York, N. Y.
Union Iron Works, Selma, Ala.
Western Wheel Scraper Co., Aurora, Ill.
- Cars. (Passenger and Freight.) [See Railroad Equipment and Supplies.]**
- Car Couplers and Knuckles.**
Safety Car H't'g & L'ght'g Co., New York, N. Y.
- Car Lighting and Heating.**
Safety Car H't'g & L'ght'g Co., New York, N. Y.
- Car Steps. (Extension.)**
Blake Car Step Works, Charlotte, N. C.
- Car Wheels, Axles and Trucks.**
Carnegie Steel Co., Pittsburgh, Pa.
Oliver Mfg. Co., Wm. J., Knoxville, Tenn.
Union Iron Works, Selma, Ala.
- Casters.**
Clark Co., Geo. P., Windsor Locks, Conn.
- Castings. (Aluminum.)**
Aluminum Company of America, Pittsburgh, Pa.
Norwalk Brass Co., Norwalk, Conn.
- Castings. (Brass and Bronze.)**
Gilbert & Sons Brass Fdry. Co., A. St. Louis, Mo.
Keystone Bronze Co., Pittsburgh, Pa.
Norwalk Brass Co., Norwalk, Conn.
Phosphor-Bronze Smelting Co., Philadelphia, Pa.
Richmond Machine Works, Inc., Richmond, Va.
Stratton & Bragg Co., Petersburg, Va.
Triumph Electric Co., Cincinnati, Ohio.
- Castings. (Iron, Gray, etc.)**
Columbian Iron Works, Chattanooga, Tenn.
Gibbs Machinery Co., Columbia, S. C.
Georgia Car & Locomotive Co., Atlanta, Ga.
Glanum Pipe & Foundry Co., Lynchburg, Va.
McWane Pipe Works, Lynchburg, Va.
Poole Engineering & Machine Co., Baltimore, Md.
Roanoke Iron Works, Inc., Roanoke, Va.
Robins Conveying Belt Co., New York, N. Y.
Ross-Meehan Foundry Co., Chattanooga, Tenn.
Stratton & Bragg Co., Petersburg, Va.
U. S. Cast Iron Pipe & Fdy. Co., New York, N. Y.
Valk & Murdock Iron Works, Charleston, S. C.
Westbrook Elevator Co., Danville, Va.
- Castings. (Malleable Iron and Steel.)**
Missouri Malleable Iron Co., East St. Louis, Ill.
- Castings. (Steel.)**
Crucible Steel Castings Co., Lansdowne, Pa.
Hoffman & Co., H. C., Baltimore, Md.
Reliance Steel Casting Co., Pittsburgh, Pa.
- Ceilings. (Metal.)**
Chattanooga Rg. & Fdry. Co., Chattanooga, Tenn.
Edwards Manufacturing Co., Cincinnati, O.
Harry Steel Co., O. K., St. Louis, Mo.
Kelley Metal Cell. & Mfg. Co., S. Pittsburgh, Pa.
Milwaukee Corrugating Co., Milwaukee, Wis.
- Cement.**
Alpha Portland Cement Co., Easton, Pa.
American Cement Co., Philadelphia, Pa.
Carolina Portland Cement Co., Charleston, S. C.
Clifford Portland Cement Co., Kingsport, Tenn.
Dixie Portland Cement Co., Chattanooga, Tenn.
Hartman Cement Co., Wm. G., Philadelphia, Pa.
Iron Portland Cement Co., Ironport, Ala.
Kirkpatrick Sand & Cem. Co., Birmingham, Ala.
Kosmos Portland Cement Co., Louisville, Ky.
Lehigh Portland Cement Co., Allentown, Pa.
Security Cement & Lime Co., Baltimore, Md.
Southeastern Lime & Cement Co., Charleston, S. C.
Southern States Portland Cem. Co., Rockmart, Ga.
Standard Portland Cement Co., Leeds, Ala.
Tidewater Portland Cement Co., Baltimore, Md.
- Cement. (Liquids.)**
Glidden Varnish Co., Cleveland, O.
- Cement Machinery.**
Aising Engineering Co., J. R., New York, N. Y.
Power & Mining Machinery Co., Cudahy, Wis.
Raymond Bros. Impact Pulv. Co., Chicago, Ill.
- Centers. (Collapsible Steel.)**
Blawiegar & Co., Memphis, Tenn.
- Chain Blocks.**
Ford Chain Block & Mfg. Co., Philadelphia, Pa.
- Chains. (Dredge, Quarry, Steam Shovel.)**
Welmer Chain & Iron Co., Lebanon, Pa.
- Channeled.**
Ingersoll-Rand Co., New York, N. Y.
- Checks, Metal. (Factory, Time and Merchandise.)**
American Railway Supply Co., New York, N. Y.
- Chemical and Drug Machinery.**
Campbell, F. F., Philadelphia, Pa.
- Chemists.**
Barn, Harry, Birmingham, Ala.
Davis, Geo. C., Philadelphia, Pa.
Froehling & Robertson, Richmond, Va.
McKenna, Dr. Chas. F., New York, N. Y.
- Chimneys. (Steel-Concrete.)**
Specialty Eng. Co., Houston, Tex.
Weber Chimney Co., Chicago, Ill.
- Chloride Accumulator.**
Electric Storage Battery Co., The, Phila., Pa.
- Chucks.**
Morse Twist Drill & Mch. Co., New Bedford, Mass.
- Cities and Towns. (Commercial and Industrial Opportunities.) [See Industrial, Agricultural and Commercial Opportunities.]**
- Clayworking Machinery. [See Brick and Clayworking Machinery.]**
- Cleaning Compound. (Floors, etc.)**
India Alkali Works, Boston, Mass.
- Clocks. (Electro-Self-Winding.)**
Electro-Clock Co., Baltimore, Md.
- Clocks. (Time Recorders.)**
Kaiser, Louis E., Baltimore, Md.
- Clocks. (Watchman.)**
Holster-Cabot Electric Co., Boston, Mass.
Kaiser, Louis E., Baltimore, Md.
- Clutches.**
Dodge Manufacturing Co., Mishawaka, Ind.
Potter Clutch & Pulley Works, Buffalo, N. Y.
- Coal.**
Alabama Coal & Iron Co., Birmingham, Ala.
Cincinnati Coal Corp., Spartanburg, S. C.
Cincinnati Fuel Co., Spartanburg, S. C.
Consolidated Coal Co., Inc., New York, N. Y.
Flat Top Fuel Co., Bluefield, W. Va.
Pittsburgh-Buffalo Co., Pittsburgh, Pa.
Tennessee Coal, Iron & S. E. Co., N'ash'n, Ala.
- Coal Briquetting Machinery.**
Devillers, Robert, Brooklyn, N. Y.

- Coal Cutters.**
Ingersoll-Rand Co., New York, N. Y.
Jeffrey Mfg. Co., Columbus, O.
- Coal Handling Machinery.**
Bartlett & Snow Co., C. O., Cleveland, O.
Brown Holsting Mch. Co., Cleveland, O.
Hayward Co., New York, N. Y.
Hart Co., C. W., West New Brighton, N. Y.
Jeffrey Mfg. Co., Columbus, O.
Link-Belt Co., Nictown (Philadelphia), Pa.
Mead-Morrison Mfg. Co., Cambridgeport, Mass.
Robins Conveying Belt Co., New York, N. Y.
Williams Co., The G. H., Cleveland, O.
- Coal Tar and By-Products.**
Barrett Mfg. Co., Philadelphia, Pa.
Carolina Portland Cement Co., Charleston, S. C.
- Coke.**
Alabama Con. Coal & Iron Co., Birmingham, Ala.
Flat Top Fuel Co., Bluefield, W. Va.
Pittsburgh-Buffalo Co., Pittsburgh, Pa.
Rogers, Brown & Co., Cincinnati, O.
Tennessee Coal, Iron & R. R. Co., B'ham'm, Ala.
- Collapsible Steel Forms. (For Concrete Work.)**
Blaw Col. Steel Centering Co., Pittsburgh, Pa.
- Concrete Construction. (Steel Reinforcement.)**
American Steel & Wire Co., Chicago, Ill.
Brown Holsting Machinery Co., Cleveland, O.
Concrete Steel Engineering Co., New York, N. Y.
Fero Concrete Construction Co., Cincinnati, O.
Foster-Creighton-Gould Co., Nashville, Tenn.
Jeffrey Mfg. Co., Columbus, O.
Kilbert Mfg. Co., Milwaukee, Wis.
Specialty Eng. Co., Houston, Tex.
Wight & Co., W. N., New York, N. Y.
- Concrete Curb Protection. (Steel.)**
Steel Protected Concrete Co., Philadelphia, Pa.
- Concrete Dams.**
Amburn Hydraulic Const. Co., Boston, Mass.
Hydraulic Properties Co., New York, N. Y.
- Concrete Floor Dressing. (Waterproof.)**
Gibbs Varnish Co., Cleveland, O.
- Concrete Forms. (Metal.)**
Blaw Col. Steel Centering Co., Pittsburgh, Pa.
Kilbert Mfg. Co., Milwaukee, Wis.
- Concrete Forms. (Steel Collapsible.)**
Blaw Col. Steel Centering Co., Pittsburgh, Pa.
- Concrete Mixers.**
Caroline Portland Cement Co., Charleston, S. C.
Jeffrey Mfg. Co., Columbus, O.
Kilbert Mfg. Co., Milwaukee, Wis.
Kilbert Mfg. Co., Milwaukee, Wis.
Standard Scale & Supply Co., Pittsburgh, Pa.
Waterloo Cement Mch. Co., Waterloo, Iowa.
- Concrete Pile. (Corrugated.)**
The Underground Const. Co., St. Louis, Mo.
- Concrete Reinforcing Bars.**
Carnegie Steel Co., Pittsburgh, Pa.
Concrete Steel Co., The, New York, N. Y.
Concrete Steel Engineering Co., New York, N. Y.
Franklin Steel Co., Franklin, Pa.
- Concrete Ties.**
Universal Concrete Tie Co., New Orleans, La.
- Condensers.**
Albinger Condenser Co., New York, N. Y.
Dean Bros. Steam Pump Wks., Indianapolis, Ind.
Westinghouse Machine Co., Pittsburgh, Pa.
York Mfg. Co., York, Pa.
- Conductor Pipe.**
Bartlett & Snow Co., C. O., Cleveland, O.
Honey & Co., C. O., Cincinnati, O.
Milwaukee Corrugating Co., Milwaukee, Wis.
- Contractors. (Hydro-Electric Developments.)**
Multiple Arch Hyd. Const. Co., Ltd., Spartanburg, S. C.
- Contractors' Machinery and Supplies. (See also Hoisting Machinery.)**
American Engineering Co., Philadelphia, Pa.
American Hoist & Derrick Co., St. Paul, Minn.
American Locomotive Co., New York, N. Y.
Austin Mfg. Co., Chicago, Ill.
Case Threshing Mch. Co., J. I., Racine, Wis.
Clyde Iron Works, Duluth, Minn.
Contractors' Plant Mfg. Co., Ltd., Buffalo, N. Y.
Fry Mfg. Co., S., Bangor, Pa.
Hyde Bros. & Co., New York, N. Y.
Ingersoll-Rand Co., New York, N. Y.
Linton, W. J., New York, N. Y.
Miles Co., The, Cincinnati, O.
Morse Metal & Supply Co., New York, N. Y.
Maryland Equipment & Supply Co., Baltimore, Md.
Mead-Morrison Mfg. Co., Cambridgeport, Mass.
Morgan Mch. Co., Chicago, Ill.
Oliver Mfg. Co., Wm. J., Knoxville, Tenn.
Paw Buckett Co., Cleveland, O.
Paw Buckett Co., Inc., H. W., Philadelphia, Pa.
Pipe & Contractors' Supply Co., New York, N. Y.
Robins Conveying Belt Co., New York, N. Y.
Smith Co., T. L., Atlanta, Ga.
Smither, Iron Works, G. L., Long Island City, New York, N. Y.
- Conveying Machinery.**
Bartlett & Snow Co., C. O., Cleveland, O.
Brown Holsting Mch. Co., Cleveland, O.
Caldwell & Son Co., H. W., Chicago, Ill.
Edge Manufacturing Co., Milwaukee, Ind.
Fry Mfg. Co., S., Bangor, Pa.
Hayward Co., New York, N. Y.
Hart Co., C. W., West New Brighton, N. Y.
Jeffrey Mfg. Co., Columbus, O.
Link-Belt Co., Nictown (Philadelphia), Pa.
Mead-Morrison Mfg. Co., Cambridgeport, Mass.
McLanahan-Stone Mach. Co., Hollidaysburg, Pa.
Power & Mining Machinery Co., Cudahy, Wis.
Pratt Engineering & Mach. Co., Chicago, Ill.
Raymond Bros. Impact Pulv. Co., Chicago, Ill.
Walker & Elliott, Wilmington, Del.
Williams Pat. Crusher & Pulv. Co., Chicago, Ill.
Western Wheel Scraper Co., Aurora, Ill.
- Crushing and Pulverizing Machinery.**
Aising Engineering Co., J. R., New York, N. Y.
Austin Mfg. Co., Chicago, Ill.
Bartlett & Snow Co., C. O., Cleveland, O.
Crescon Co., Geo. V., Philadelphia, Pa.
Gardner Crusher Co., New York, N. Y.
Jeffrey Mfg. Co., Columbus, O.
McLanahan-Stone Mach. Co., Hollidaysburg, Pa.
Power & Mining Machinery Co., Cudahy, Wis.
Pratt Engineering & Mach. Co., Chicago, Ill.
Raymond Bros. Impact Pulv. Co., Chicago, Ill.
Walker & Elliott, Wilmington, Del.
Williams Pat. Crusher & Pulv. Co., Chicago, Ill.
Western Wheel Scraper Co., Aurora, Ill.
- Culverts. (Corrugated Metal.)**
American Rolling Mill Co., Middletown, O.
Canton Culvert Co., The, Canton, O.
Dixie Culvert & Mch. Co., Atlanta, Ga.
Harry Steel Co., O. K., St. Louis, Mo.
Kentucky Culvert Mfg. Co., Buechel, Ky.
New Orleans Rfg. & Metal Wks., New Orleans, La.
North Carolina Metal Culv. Co., Greensboro, N. C.
Roanoke Bridge Co., Roanoke, Va.
Tennessee Metal Culvert Co., Nashville, Tenn.
Virginia Metal & Culvert Co., Roanoke, Va.
- Culverts. (Vitrified Pipe.)**
Bliss Sewer Pipe Co., Macon, Ga.
Stevens Sons Co., H., Macon, Ga.
- Cupola Furnaces.**
Northern Engineering Works, Detroit, Mich.
Parson Co., J. W., Philadelphia, Pa.
Petroleum Iron Works Co., Sharon, Pa.
- Cuts. (Half-tone, Line, etc.)**
Baltimore Maryland Engr. Co., Baltimore, Md.
- Cutter Heads. (Woodworking.)**
Shimer & Sons, Samuel J., Milton, Pa.
- Cutter Grinders.**
Abrasive Material Co., Philadelphia, Pa.
Vitrified Wheel Co., Westfield, Mass.
- Dams. (Multiple Arch Masonry.)**
Multiple Arch Hydraulic Const. Co., Ltd., Spartanburg, S. C.
- Dams. (Reinforced Concrete.)**
Amburn Hydraulic Const. Co., Boston, Mass.
Hydraulic Properties Co., New York, N. Y.
- Derricks and Derrick Fittings.**
American Hoist & Derrick Co., St. Paul, Minn.
Monaghan Machine Co., Chicago, Ill.
National Hoisting Engine Co., Haverhill, W. J.
Waterloo Cement Mch. Co., Waterloo, Iowa.
- Designers and Illustrators. (Printed Matter.)**
Baltimore Maryland Engr. Co., Baltimore, Md.
- Die Blocks.**
Erie Forge Co., Erie, Pa.
- Ditching Machinery.**
American Hoist & Derrick Co., St. Paul, Minn.
American Locomotive Co., New York, N. Y.
American Steel Drilling Co., Ft. Wayne, Ind.
Browning Mfg. Co., Mansfield, O.
Fairbanks Steam Shovel Co., Marion, O.
Hayward Co., The, New York, N. Y.
Marion Steam Shovel Co., Marion, O.
Monaghan Machine Co., Chicago, Ill.
Owen Bucket Co., Cleveland, O.
Williams Co., The G. H., Cleveland, O.
- Doors. (Birch Veneered.)**
Carolina Portland Cement Co., Charleston, S. C.
Mason & Felton Lumber Co., Macon, Ga.
- Doors. (Steel Rolling.)**
Klineear Mfg. Co., Columbus, O.
- Doors. (Tin Clad.)**
Victor Mfg. Co., Newburyport, Mass.
- Doors, Partitions. (Metallic.)**
Dahlstrom Metallic Door Co., Jamestown, N. Y.
United States Metal Products Co., New York, N. Y.
- Doors, Sash and Blinds.**
Columbus Iron Works Co., Columbus, Ga.
Mason & Felton Lumber Co., Macon, Ga.
- Draftsmen's Supplies.**
Keuffel & Esser, Hoboken, N. J.
Weber & Co., F., Philadelphia, Pa.
- Dredge Chains.**
Weimer Chain & Iron Co., Lebanon, Pa.
- Dredges. (See Excavating Machinery.)**
- Drills. (Pneumatic.) (See also Drills, Rock and Mining.)**
Fort Wayne Electric Works, Fort Wayne, Ind.
Ingersoll-Rand Co., New York, N. Y.
Keystone Steam Well Mach. Co., Beaver Falls, Pa.
- Drills. (Rock and Mining.)**
Chicago Pneumatic Tool Co., Chicago, Ill.
Fort Wayne Electric Works, Fort Wayne, Ind.
Independent Pneumatic Tool Co., Chicago, Ill.
Ingersoll-Rand Co., New York, N. Y.
Jeffrey Mfg. Co., Columbus, O.
Wickes Bros., Jersey City, N. J.
- Drills. (Twist.)**
Manning, Maxwell & Moore, Inc., New York, N. Y.
Morae Twist Drill & Mch. Co., New Bedford, Mass.
- Drive Well Points and Well Supplies.**
National Tube Co., Pittsburgh, Pa.
- Drop Forgings.**
American Spiral Pipe Works, Chicago, Ill.
Richmond Forgings Corporation, Richmond, Va.
- Drop Forging Machinery.**
Bliss Co., E. W., Brooklyn, N. Y.
- Drying Machinery.**
American Blower Co., Detroit, Mich.
American Process Co., New York, N. Y.
Bailey-Lebby Co., The, Charleston, S. C.
Buffalo Forge Co., Buffalo, N. Y.
Ruggles-Coles Engineering Co., New York, N. Y.
Sturtevant Co., B. F., Hyde Park, Mass.
- Drykilns.**
American Blower Co., Detroit, Mich.
Buffalo Forge Co., Buffalo, N. Y.
Union Iron Works Co., Selma, Ala.
- Dumbwaiters.**
Hollister-Whitney Co., Quincy, Ill.
Sidney Elevator & Mfg. Co., Sidney, O.
Spindel, J. G., Reading, Pa.
- Dump Wagons and Wagon Boxes.**
Case Threshing Mch. Co., J. I., Racine, Wis.
Eagle Wagon Works, Auburn, N. Y.
Troy Wagon Works Co., Troy, O.
- Dust-Collecting Systems.**
Buffalo Forge Co., Buffalo, N. Y.
Savannah Blow Pipe Co., Savannah, Ga.
Standard Blower & Metal Mfg. Co., Atlanta, Ga.
- Dynamite.**
du Pont de Nemours Powder Co., E. I., Wilmington, Del.
- Dynamometers and Motors. (Steam Turbine.)**
De Laval Steam Turbine Co., Trenton, N. J.
Emerson Steam Pump Co., Alexandria, Va.
Fort Wayne Electric Works, Ft. Wayne, Ind.
General Electric Co., Schenectady, N. Y.
Southwest Fdry. & Mch. Co., Philadelphia, Pa.
Terry Steam Turbine Co., New York, N. Y.
Western Electric Co., New York, N. Y.
Westinghouse Elec. & Mfg. Co., Pittsburgh, Pa.
- Eaves. (Trough.)**
Edwards Mfg. Co., Cincinnati, O.
Hussey & Co., C. G., Pittsburgh, Pa.
Milwaukee Corrugating Co., Milwaukee, Wis.
- Ejectors. (Auto. Sewage.)**
Blaisdell Machinery Co., Bradford, Pa.
- Electric Machinery. (Dynamometers, Generators, Motors, etc.)**
Allis-Chalmers Co., Milwaukee, Wis.
American Engine Co., Bound Brook, N. J.
American Machine Co., Louisville, Ky.
Crockett-Wheeler Co., Amper, N. J.
Engberg's Elect. & Mch. Wks., St. Joseph, Mich.
Fairbanks, Morse & Co., Chicago, Ill.
Fort Wayne Electric Works, Ft. Wayne, Ind.
General Electric Co., Schenectady, N. Y.
Gregory Electric Co., Chicago, Ill.
Kentucky Electrical Co., Owensboro, Ky.
Kleinmans, H., Pittsburgh, Pa.
Lee Electric Co., Baltimore, Md.
Miller-Owen Elec. Co., Pittsburgh, Pa.
Piedmont Electric Co., Asheville, N. C.
Ridgway Dynamo & Engine Co., Ridgway, Pa.
Riker Machinery Co., New York, N. Y.
Robbins & Myers Co., Springfield, O.
Southwest Fdry. & Mch. Co., Philadelphia, Pa.
Sturtevant Co., B. F., Hyde Park, Mass.
Triumph Electric Co., Cincinnati, O.
Westinghouse Elec. & Mfg. Co., Pittsburgh, Pa.
- Electrical Contractors, Instruments and Supplies.**
American Mach. & Mfg. Co., Charlotte, N. C.
Crockett-Wheeler Co., Amper, N. J.
Electrical Engineers' Equip. Co., Chicago, Ill.
Engberg's Elect. & Mch. Wks., St. Joseph, Mich.
Fort Wayne Electric Works, Ft. Wayne, Ind.
General Electric Co., Schenectady, N. Y.
Gregory Electric Co., Chicago, Ill.
Johns-Manville Co., H. W., New York, N. Y.
Kentucky Electrical Co., Owensboro, Ky.
Lee Electric Co., Baltimore, Md.
Levy, Deronda, Columbus, Ga.
Piedmont Electric Co., Asheville, N. C.
Robbins & Myers Co., Springfield, O.
Westinghouse Elec. & Mfg. Co., Pittsburgh, Pa.
- Electrical Power-House Supplies.**
Electrical Engineers' Equip. Co., Chicago, Ill.
- Electro Magnet. (See Magnet Electro.)**
- Elevating, Conveying and Power Transmission Machinery. (See also Conveying Mch. and Power Transmission Mch.)**
Jeffrey Mfg. Co., Columbus, O.
- Elevators.**
Albro-Clem Elevator Co., Philadelphia, Pa.
American Machine Co., Louisville, Ky.
Curran Elevator Co., James H., Cincinnati, O.
Hollister-Whitney Co., Quincy, Ill.
Kansas City Elevator Mfg. Co., Kansas City, Mo.
Moffatt Machinery Mfg. Co., Charlotte, N. C.
Ohio Elevator & Machine Co., Columbus, O.
Otis Elevator Co., New York, N. Y.
Sidney Elevator & Mfg. Co., Sidney, O.
Spindel, J. G., Reading, Pa.
Warren Elevator Co., Baltimore, Md.
Westbrook Elevator Co., Danville, Va.
- Elevator Safety Appliances.**
Both Elevator Safety Co., Inc., Baltimore, Md.
- Elevator Buckets.**
Caldwell & Son Co., H. W., Chicago, Ill.
Dodge Mfg. Co., Milwaukee, Ind.
Jeffrey Mfg. Co., Columbus, O.
Link-Belt Co., Philadelphia, Pa.
- Elevator Enclosures and Cabs.**
Bolles Iron & Wire Works, J. E., Detroit, Mich.
Cincinnati Mfg. Co., Cincinnati, O.
Dow Wire Works, Louisville, Ky.
Dufur & Co., Baltimore, Md.
Dufur, Bazzott & Co., Baltimore, Md.
Meyers Mfg. Co., The Fred J., Hamilton, O.
Ohio Elevator & Machine Co., The, Columbus, O.
Otis Elevator Co., New York, N. Y.
Southern Wire & Iron Mfg. Co., Dallas, Tex.
- Elevator Rope. (See Wire Rope.)**
- Elevator Safety Gates.**
Richmond Safety Gate Co., Richmond, Ind.
- Emery Wheels. (See Grinding Wheels.)**
- Engines—**
COMBUSTION.
Improved Equipment Co., New York, N. Y.
- CONSULTING.**
Graham, Edgar M., Muskogee, Okla.
Hill, Norman A., Baltimore, Md.
Jaudon Engineering Co., H. S., Savannah, Ga.
Lewis, Fred H., Birmingham, Ala.
Lide, Martin J., Birmingham, Ala.
Macfarren, S. J., Washington, D. C.
Nichols, Charles H., New York, N. Y.
Quick, Alfred M., Baltimore, Md.
- DESIGNING—CONSTRUCTING.**
Brindley Co., New York, N. Y.
Foster-Creighton-Gould Co., Nashville, Tenn.
Gulf Const. Const. Co., Houston, Tex.
Hague, John, St. Louis, Mo.
Harlow Co., James H., Baltimore, Md.
Jaudon Engineering Co., H. S., Savannah, Ga.
Klotz & Lee, San Antonio, Tex.
Specialty Eng. Co., Houston, Tex.
Stone & Webster Eng. Co., Boston, Mass.
Summers & Co., L. L., Chicago, Ill.
White & Co., J. G., New York, N. Y.
- DESIGNING, CONSTRUCTING, POWER PLANTS, ETC.**
Brindley Co., New York, N. Y.
Budge, Day & Zimmerman, Philadelphia, Pa.
Emory & Eisenberg, Philadelphia, Pa.
Lea, Henry I., Chicago, Ill.
Lockwood, Greene & Co., Boston, Mass.
MacLachlan Eng. Co., J. H., Baltimore, Md.
Manning-Hughes Co., Charlotte, N. C.
Multiple Arch Hyd. Const. Co., Ltd., Spartanburg, S. C.
Quick, Alfred M., Baltimore, Md.
Suzine, J. H., Greenville, S. C.
Spiker, Wm. D., Atlanta, Ga.
Stevens, John A., Lowell, Mass.
Virginia Bridge & Iron Co., Roanoke, Va.
Whitfield, Geo. H., Richmond, Va.
- DRAINAGE.**
Brindley Co., New York, N. Y.
Morgan Engineering Co., Memphis, Tenn.
- EFFICIENCY.**
Macfarren, S. J., Washington, D. C.
- ELECTRIC, CIVIL, ETC.**
Arnold Co., The, Chicago, Ill.
Brindley Co., New York, N. Y.
Cottrill & Cottrill, Greenwood, S. C.
Crockett-Wheeler Co., Amper, N. J.
Drane, Brent S., Charlotte, N. C.
Emory & Eisenberg, Philadelphia, Pa.
Kelliholtz, F. O., Baltimore, Md.
Layman, E. F., Cincinnati, O.
Lewis, Fred H., Birmingham, Ala.
Lide, Martin J., Birmingham, Ala.
Manning-Hughes Co., Charlotte, N. C.
Morgan Engineering Co., Memphis, Tenn.
Potter, Alexander, New York, N. Y.
Reding & Howard, Baltimore, Md.
Rucker, B. Parks, Charlotte, N. C.
Waldo, W., Houston, Tex.
White & Co., J. G., New York, N. Y.
Whitfield, Geo. H., Richmond, Va.
Young Co., C. S., San Antonio, Tex.
- GAS.**
Lea, Henry I., Chicago, Ill.
- GEOLOGICAL.**
Bureau of Assoc. Geological Engineers, Boston, Mass.
Davis, Geo. C., Philadelphia, Pa.
Froehling & Robertson, Richmond, Va.
- HYDRAULIC, SANITARY AND SEWERAGE.**
Brindley Co., New York, N. Y.
Burgway, C. P., Richmond, Va.
Harlow Co., James H., Baltimore, Md.
Hutton, T. Chalkley, Wilmington, Del.
Manning-Hughes Co., Charlotte, N. C.
McCarty, Co., Inc., The J. B., Atlanta, Ga.
Multiple Arch Hydraulic Const. Co., Ltd., Spartanburg, S. C.
Myers, E. W., Greensboro, N. C.
Pew, Arthur, Atlanta, Ga.
Specialty Eng. Co., Houston, Tex.
Tucker & Laxton, Charlotte, N. C.
- ICE AND REFRIGERATING.**
Hague, John, St. Louis, Mo.
Tait-Nordmeyer Eng. Co., St. Louis, Mo.

- Engineers—**
ILLUMINATING.
Holophane Co., Newark, Ohio.
- LANDSCAPE.**
Drane, Brent S., Charlotte, N. C.
Kedding & Howard, Baltimore, Md.
- REINFORCED CONCRETE CONSTRUCTION, BUILDINGS, BRIDGES, ETC.**
Concrete Steel Engineering Co., New York, N. Y.
Gardner & Howe, Memphis, Tenn.
Layman, E. F., Cincinnati, O.
- WATER-WORKS.**
Burgwyn, C. P. E., Richmond, Va.
Myers, E. W., Greensboro, N. C.
- Engines.**
GAS AND GASOLINE.
Blaisdell Machinery Co., Bradford, Pa.
Bogart Gas Power Eng. Co., Buffalo, N. Y.
Fairbanks, Morse & Co., Chicago, Ill.
Mietz, A., New York, N. Y.
Otto Gas Engine Works, Philadelphia, Pa.
Power Mfg. Co., Lima, Ohio.
Standard Gas Power Co., Atlanta, Ga.
Westinghouse Machine Co., The Pittsburg, Pa.
- OIL.**
Covington Mch. Co., New York, N. Y.
Mietz, A., New York, N. Y.
Power Mfg. Co., Lima, Ohio.
- Engines. (Steam.)**
Allis-Chalmers Co., Milwaukee, Wis.
American Blower Co., Detroit, Mich.
American Engine Co., Bound Brook, N. J.
American Hoist & Derrick Co., St. Paul, Minn.
Ames Iron Works, Oswego, N. Y.
Atlas Engine Works, Indianapolis, Ind.
Ball Engine Co., Erie, Pa.
Brownell Co., The Dayton, O.
Buffalo Forge Co., Buffalo, N. Y.
Cameron & Barkley Co., Charleston, S. C.
Chicago House Wrecking Co., Chicago, Ill.
Cooper Co., C. & O., Mt. Vernon, O.
Engberg's Elect. & Mch. Wks., St. Joseph, Mich.
Gibbs Machinery Co., Columbus, S. C.
Greenwald Co., I. & E., Cincinnati, O.
Griffith & Wedge Co., The Zanesville, O.
Harrisburg Fdry. & Mch. Wks., Harrisburg, Pa.
Hooven, Owen, Rentschler Co., Hamilton, O.
Houston, Stanwood & Gamble Co., Cincinnati, O.
Lefel & Co., James, Springfield, O.
Lombard Iron Works, Augusta, Ga.
Mecklenburg Iron Works, Charlotte, N. C.
Morris Machine Works, Baldwinville, N. Y.
Murray Iron Works Co., Burlington, Ia.
Oil City Boiler Co., Oil City, Pa.
Phoenix Iron Works Co., Meadville, Pa.
Price Machinery Co., S. M., Norfolk, Va.
Ridgway Dynamo & Engine Co., Ridgway, Pa.
Schofield's Sons Co., J. S., Macon, Ga.
Smith-Courtney Co., Richmond, Va.
Southern Engine & Boiler Works, Jackson, Tenn.
Sturtevant Co., B. F., Hyde Park, Mass.
Union Iron Works Co., Selma, Ala.
Vilter Mfg. Co., Milwaukee, Wis.
Westinghouse Machine Co., Pittsburg, Pa.
- Envelope Sealer and Stamper.**
Commercial Sales & Mfg. Co., Oberlin, O.
- Envelopes.**
Young & Selden Co., Baltimore, Md.
- Excavating Machinery. (Steam Shovels, etc.)**
American Locomotive Co., New York, N. Y.
American Steel Dredge Co., Ft. Wayne, Ind.
Baldwin Equipment & Supply Co., Chicago, Ill.
Browning Mfg. Co., Mansfield, O.
Bucyrus Co., Cincinnati, Wis.
Cable Excavator Co., Philadelphia, Pa.
Fairbanks Steam Shovel Co., Marion, O.
Hayward Co., New York, N. Y.
Jeffrey Mfg. Co., Columbus, O.
Lidgerwood Mfg. Co., New York, N. Y.
Males Co., Cincinnati, O.
Marion Steam Shovel Co., Marion, O.
Monaghan Machine Co., Chicago, Ill.
Owen Bucket Co., Cleveland, O.
Williams Co., The G. H., Cleveland, O.
- Excelsior Machinery.**
Kline, Lewis T., Alpena, Mich.
- Exhaust Hoods.**
Abendroth & Root Mfg. Co., Newburgh, N. Y.
American Spiral Pipe Works, Chicago, Ill.
Greenwald Co., I. & E., Cincinnati, O.
Hoppes Mfg. Co., Springfield, O.
- Exhibits. (Machinery Builders' Equipment and Supplies.)**
Bourse, The, Philadelphia, Pa.
Builders' Exchange, Baltimore, Md.
- Expansion Joints.**
Alberger Condenser Co., New York, N. Y.
Badger & Sons Co., E. B., Boston, Mass.
- Explosives.**
de Pont de Nemours Powder Co., E. I., Wilmington, Del.
- Extension Steps. (For Railroad Coaches.)**
Blake Car Step Works, Charlotte, N. C.
- Factory Sites. (Town and Railroad.) (See Industrial, Agricultural and Commercial Opportunities.)**
- Fans. (Electric.)**
General Electric Co., Schenectady, N. Y.
Robbins & Myers Co., Springfield, O.
Western Electric Co., New York, N. Y.
Westinghouse Elec. & Mfg. Co., Pittsburg, Pa.
- Fans. (Ventilating.) (See Blowers, Exhaust Fans.)**
- Fastener Driving Machine. (Corrugated Joint.)**
Sarance Machine Co., St. Joseph, Mich.
- Feed-Water Heaters and Purifiers.**
Alberger Condenser Co., New York, N. Y.
American Water Softener Co., Philadelphia, Pa.
Blake & Knowles Steam Pump Works, New York, N. Y.
Brownell Co., Dayton, O.
Exeter Machine Works, Pittsburg, Pa.
Gibbs Machinery Co., Columbus, S. C.
Greenwald Co., I. & E., Cincinnati, O.
Hoppes Mfg. Co., Springfield, O.
McAdoo, Thomas, Philadelphia, Pa.
Murray Iron Works Co., Burlington, Ia.
National Pipe Bending Co., New Haven, Conn.
Scalfe & Sons Co., Wm. B., Pittsburg, Pa.
Stewart Heater Co., Buffalo, N. Y.
Wilmington Iron Works, Wilmington, N. C.
- Feed-Water Heater and Purifier and Oil Separator Combined.**
Blake & Knowles Steam Pump Works, New York, N. Y.
Stewart Heater Co., Buffalo, N. Y.
- Felt. (Building, Sheathing.)**
Barrett Mfg. Co., Philadelphia, Pa.
- Fencing, Entrance Gates. (Iron, Steel, Wire.)**
American Steel & Wire Co., Chicago, Ill.
Bollie Iron & Wire Works, J. E., Detroit, Mich.
Bow Wire Works, Louisville, Ky.
- Duffor & Co., Baltimore, Md.**
New Jersey Wire Cloth Co., Trenton, N. J.
Ohio Elevator & Mch. Co., The, Columbus, O.
- Fertilizer Machy. (See also Phosphate Mch.)**
Campbell, P. P., Philadelphia, Pa.
Pratt Eng. & Mch. Co., Atlanta, Ga.
Smith Co., T. L., Atlanta, Ga.
Valk & Murdoch Iron Works, Charleston, S. C.
Walker & Elliott, Wilmington, Del.
Wilmington Iron Works, Wilmington, N. C.
- Files.**
Barnett Co., G. & H., Philadelphia, Pa.
Delta File Works, Philadelphia, Pa.
Nicholson File Co., Providence, R. I.
- Filters. (Water, for Domestic and Industrial Purposes.)**
American Water Softener Co., Philadelphia, Pa.
International Filter Co., Chicago, Ill.
Lynn-Superior Co., The, Cincinnati, O.
New York Co., Jewell Fil. Co., New York, N. Y.
Roberts Filter Mfg. Co., Philadelphia, Pa.
Scalfe & Sons Co., Wm. B., Pittsburg, Pa.
Tucker & Laxton, Charlotte, N. C.
- Financial Publication.**
Financial Review, New York, N. Y.
- Fire Alarm Boxes.**
Balto. Mch. Products Co. (Relay Station P. O.), Baltimore, Md.
- Fire Clay Brick. (See Brick, Fire Clay.)**
- Fire Box Blocks.**
Ashland Fire Brick Co., Ashland, Ky.
- Fire Door Fixtures.**
Victor Mfg. Co., Newburyport, Mass.
- Fire Extinguishers.**
Badger & Sons Co., E. B., Boston, Mass.
General Fire Extinguisher Co., Providence, R. I.
Kaiser, Louis E., Baltimore, Md.
- Fire Extinguishing Apparatus.**
General Fire Extinguisher Co., Providence, R. I.
- Fire Escapes.**
Boiles Iron & Wire Works, J. E., Detroit, Mich.
Chesapeake Iron Works, Baltimore, Md.
- Fire Insurance.**
Hartford Fire Insurance Co., Hartford, Conn.
- Fireplaces. (Artistic Brick.)**
Flake & Co., Inc., New York, N. Y.
- Fireproof Building Construction. (Steel.) (See Concrete Construction.)**
- Fireproof Building Material.**
Dahlstrom Metallic Door Co., Jamestown, N. Y.
Johns-Manville Co., H. W., New York, N. Y.
- Fireproof Doors and Shutters.**
Dahlstrom Metallic Door Co., Jamestown, N. Y.
Kinsner Mfg. Co., Columbus, O.
New Orleans Safe Co., New Orleans, La.
Richmond Safety Gate Co., Richmond, Ind.
United States Metal Products Co., New York, N. Y.
Victor Mfg. Co., Newburyport, Mass.
- Fireproof Windows. (See Window Frames and Sashes (Fireproof).)**
- Flanges. (Iron and Steel.)**
American Cast Iron Pipe Co., Birmingham, Ala.
American Pipe & Construction Co., Phila., Pa.
American Spiral Pipe Works, Chicago, Ill.
Cameron Steam Pump Wks., A. S., New York, N. Y.
Dart Manufacturing Co., E. M., Providence, R. I.
Glamorgan Pipe & Foundry Co., Lynchburg, Va.
Marion Steam Shovel Co., Marion, O.
National Tube Co., Pittsburg, Pa.
U. S. Cast Iron Pipe & Fdy. Co., New York, N. Y.
Whitlock Coil Pipe Co., Hartford, Conn.
Wood & Co., B. D., Philadelphia, Pa.
- Flexible Joints.**
Moran Flex. Steam Joint Co., Inc., Louisville, Ky.
- Flooring. (Cement.)**
Dagostin & Angelini Bros., Montgomery, Ala.
- Flooring. (Hardwood, Maple, Oak.)**
Carolina Portland Cement Co., Charleston, S. C.
Northcross Mantel Co., W. J., Memphis, Tenn.
Nashville Hardw'd Flooring Co., Nashville, Tenn.
- Flour and Grist Mill Machinery and Supplies.**
Caldwell & Sons Co., H. W., Chicago, Ill.
Gibbs Machinery Co., Columbus, S. C.
Kordyke & Marmon Co., Indianapolis, Ind.
Salem Foundry & Machine Works, Salem, Va.
Starr Co., B. F., Baltimore, Md.
Veatch & Co., L. R., Louisville, Ky.
Wolf Co., Chambersburg, Pa.
- Flushtank Regulator.**
Modern Iron Works, Quincy, Ill.
- Foot Valves.**
Cameron Steam Pump Wks., A. S., New York, N. Y.
- Forges.**
Buffalo Forge Co., Buffalo, N. Y.
Sturtevant Co., B. F., Hyde Park, Mass.
- Forgings.**
Richmond Forgings Corporation, Richmond, Va.
Welmer Chain & Iron Co., Lebanon, Pa.
- Forgings. (Hammered.)**
Erie Forge Co., Erie, Pa.
- Foundations. (Waterproof.)**
Underground Constr. Co., The, St. Louis, Mo.
- Foundations. (Open or Pneumatic.)**
Missouri Val. Bridge & Iron Co., Leavenworth, Kan.
- Foundry Equipment and Supplies.**
Paxson Co., J. W., Philadelphia, Pa.
- Frogs. (See Railroad Frogs and Switches.)**
- Fuel Economizer.**
Green Fuel Economiser Co., Mattewan, N. Y.
Sturtevant Co., B. F., Hyde Park, Mass.
- Fuel Oil.**
Gulf Refining Co., New York, N. Y.
Texas Co., The, New York, N. Y.
- Fuel Oil Equipment.**
Petroleum Iron Works Co., Sharon, Pa.
- Fuses, Bases and Fittings.**
Johns-Manville Co., H. W., New York, N. Y.
- Galvanized Steel and Iron.**
American Sheet & Tin Plate Co., Pittsburg, Pa.
J. O. H. Galvanizing Co., Philadelphia, Pa.
La Belle Iron Works, Steubenville, O.
McCalla, Harold, Philadelphia, Pa.
New Orleans Roof & Metal Co., New Orleans, La.
Wood Iron & Steel Co., Alan, Philadelphia, Pa.
Youngstown Sheet & Tube Co., Youngstown, O.
- Gages. (Fireproof and Portable.)**
Harry Steel Co., O. K., St. Louis, Mo.
- Gas Blowers. (Turbine.)**
Terry Steam Turbine Co., New York, N. Y.
- Gas Compressors.**
Blaisdell Machinery Co., Bradford, Pa.
Ingersoll-Rand Co., New York, N. Y.
- Gas Engines. (See Engines, Gas.)**
- Gas Holders.**
Chicago Bridge & Iron Wks., Chicago, Ill.
- Gas Plants.**
Western Gas Construction Co., Ft. Wayne, Ind.
- Gas Plants and Benches.**
Improved Equipment Co., New York, N. Y.
- Gas Producers.**
Bogart Gas Power Eng. Co., Buffalo, N. Y.
Improved Equipment Co., New York, N. Y.
Otto Gas Engine Works, Philadelphia, Pa.
Standard Gas Power Co., Atlanta, Ga.
Westinghouse Machine Co., Pittsburg, Pa.
Wood & Co., B. D., Philadelphia, Pa.
- Gasoline and Kerosene.**
Gulf Refining Co., Pittsburg, Pa.
Texas Co., The, New York, N. Y.
- Gas and Steam Fitters' Tools.**
Saunders' Sons, D., Yonkers, N. Y.
- Gaskets. (Rubber.)**
N. J. Car Spring & Rubber Co., Jersey City, N. J.
- Gears.**
Albro-Clem Elevator Co., Philadelphia, Pa.
Brown Co., A. & F., New York, N. Y.
Caldwell Co., Inc., W. E., Louisville, Ky.
Caldwell & Son Co., H. W., Chicago, Ill.
Crescent Gear Co., Y., Philadelphia, Pa.
Dayton Globe Iron Works Co., Dayton, O.
Dodge Manufacturing Co., Mishawaka, Ind.
Earle Gear & Machine Co., The, Philadelphia, Pa.
Jeffrey Mfg. Co., Columbus, O.
Posh Engineering & Machine Co., Baltimore, Md.
Positive Clutch & Pulley Works, Buffalo, N. Y.
Trump Mfg. Co., Springfield, O.
- Geologists.**
Bureau of Assoc. Geological Engineers, Boston, Mass.
Froehling & Robertson, Richmond, Va.
- Glass. (Plate, etc.)**
Hinswanger & Co., Memphis, Tenn.
Holophane Co., Newark, Ohio.
- Governors.**
Pickering Governor Co., Portland, Conn.
- Grain Elevator Supplies.**
Caldwell & Sons Co., H. W., Chicago, Ill.
Dodge Manufacturing Co., Mishawaka, Ind.
Jeffrey Mfg. Co., Columbus, O.
Link-Belt Co., Nictown (Philadelphia), Pa.
- Granite.**
Harris Granite Quarries Co., Salisbury, N. C.
- Graphite.**
Detroit Graphite Co., Detroit, Mich.
Dixon Crucible Co., Joseph, Jersey City, N. J.
- Grates and Grate Bars.**
Thomas Grate Bar Co., Birmingham, Ala.
- Gravel.**
Arundel Sand & Gravel Co., Baltimore, Md.
Lathrop & Co., O. P., Richmond, Va.
- Grease.**
Albany Lubricating Co., New York, N. Y.
- Grease Cups.**
Albany Lubricating Co., New York, N. Y.
- Greases and Lubricating Compounds.**
Galena Signal Oil Co., Franklin, Pa.
Robinson & Son Co., Wm. C., Baltimore, Md.
Texas Co., The, New York, N. Y.
- Grinders. (Gypsum, Limestone, etc.)**
Gardner Crusher Co., New York, N. Y.
Williams Pat. Crusher & Pulv. Co., Chicago, Ill.
- Grinding Wheels.**
Abrasive Material Co., Philadelphia, Pa.
Carborundum Co., Niagara Falls, N. Y.
Norton Co., Worcester, Mass.
Vitrified Wheel Co., Westfield, Mass.
- Groovers.**
Huther Bros. Saw Mfg. Co., Rochester, N. Y.
- Gunpowder.**
de Pont de Nemours Powder Co., E. I., Wilmington, Del.
- Hammers. (Steam, Power, Pneumatic.)**
Chicago Pneumatic Tool Co., Chicago, Ill.
Independent Pneumatic Tool Co., Chicago, Ill.
Ingersoll-Rand Co., New York, N. Y.
- Hand Elevators.**
McKenna Bros. Brass Co., Pittsburg, Pa.
Sidney Elevator Mfg. Co., Sidney, O.
- Handle Machinery. (See Woodworking Mch.)**
- Hangers. (See Pulleys, Shafting and Hangers.)**
- Hardwood Doors and Trim.**
Masee & Felton Lumber Co., Macon, Ga.
- Hauling Engines. (Steam Traction.)**
Case Threshing Mach. Co., J. I., Racine, Wis.
- Hay Tools.**
Myers & Bro., F. W., Ashland, O.
- Heater. (Portable, for Bituminous Pavements.)**
Ruggles-Coles Engineering Co., New York, N. Y.
- Heating Apparatus, Engineers and Contractors.**
American Blower Co., Detroit, Mich.
Buffalo Forge Co., Buffalo, N. Y.
Monitor Steam Generator Mfg. Co., Balto., Md.
Sturtevant Co., B. F., Hyde Park, Mass.
- Holisting Machinery.**
American Engineering Co., Philadelphia, Pa.
American Hoist & Derrick Co., St. Paul, Minn.
Browns Holisting Mch. Co., Cleveland, O.
Byers Machine Co., John F., Ravenna, O.
Clyde Iron Works, Duluth, Minn.
Contractors' Plant Mfg. Co., Ltd., Buffalo, N. Y.
Exeter Machine Works, Pittsburg, Pa.
Flory Mfg. Co., S., Bangor, Pa.
Hayward Co., New York, N. Y.
Link-Belt Co., Nictown (Philadelphia), Pa.
Lidgerwood Mfg. Co., New York, N. Y.
Males Co., Cincinnati, O.
Mead-Morrison Mfg. Co., Cambridgeport, Mass.
Monaghan Machine Co., Chicago, Ill.
National Holisting Engine Co., Harrison, N. J.
Smith Co., T. L., Atlanta, Ga.
Stroudsburg Engine Works, Stroudsburg, Pa.
- Holists.**
CHADW.
Ford Chain Block & Mfg. Co., Philadelphia, Pa.
Speldel, J. G., Reading, Pa.
- ELECTRIC.**
American Hoist & Derrick Co., St. Paul, Minn.
Lidgerwood Mfg. Co., New York, N. Y.
Monaghan Mch. Co., Chicago, Ill.
Northern Engineering Works, Detroit, Mich.
Patten Mfg. Co., Chattanooga, Tenn.
- PNEUMATIC MOTORS.**
Chicago Pneumatic Tool Co., Chicago, Ill.
Ingersoll-Rand Co., New York, N. Y.
- Hoops, Bands, etc. (Galvanized.)**
J. C. H. Galvanizing Co., Philadelphia, Pa.
McCalla, Harold, Philadelphia, Pa.
- Hoops. (Barrel.)**
American Steel & Wire Co., Chicago, Ill.
Carnegie Steel Co., Pittsburg, Pa.
- Hose.**
Eureka Fire Hose Mfg. Co., New York, N. Y.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
- Hotels.**
Great Southern Hotel, Gulfport, Miss.
Hotel Essex, Boston, Mass.
- Hot Water Service Heaters.**
Alberger Pump Co., New York, N. Y.
- Hydrants.**
Bourbon Copper & Brass Wks. Co., Cincinnati, O.
Columbian Iron Works, Chattanooga, Tenn.
Glamorgan Pipe & Foundry Co., Lynchburg, Va.
Goulds Mfg. Co., Seneca Falls, N. Y.
Myers & Bro., F. E., Ashland, O.
Wood & Co., B. D., Philadelphia, Pa.
- Hydraulic Lifts.**
American Spiral Pipe Works, Chicago, Ill.
- Hydraulic Rams.**
Goulds Mfg. Co., Seneca Falls, N. Y.
Rife Engine Co., New York, N. Y.
- Icemaking Machinery and Supplies.**
Columbus Iron Works Co., Columbus, Ga.
Creamery Package Mfg. Co., Chicago, Ill.
Frick Co., The, Waynesboro, Pa.
Hague, John, St. Louis, Mo.
Remington Machine Co., Wilmington, Del.
Tait-Nordmeyer Eng. Co., St. Louis, Mo.
Vilter Mfg. Co., Milwaukee, Wis.
Vogt Machine Co., Henry, Louisville, Ky.
York Mfg. Co., York, Pa.
- Incorporators. (Companies.)**
Delaware Trust Co., Wilmington, Del.
- Industrial, Agricultural and Commercial Opportunities.**
CITIES AND TOWNS.
Atlanta, Ga., Ga. Bureau of Indus'y & Imm'gr.
Baltimore, Md., Gas & Electric Co.
Bedford City, Va., Board of Trade.
Payetteville, N. C., Chamber of Commerce.
Newport News, Va., Old Dominion Land Co.
Texas City, Tex., Texas City Transportation Co.
Winchester, Va., Business Men's League.
- RAILROADS.**
Atlanta, Birmingham & Atlantic R. R., Atlanta, Ga.
Atlanta & West Point R. R. Co., Montgomery, Ala.
Baltimore & Ohio Railroad, Baltimore, Md.
Carolina, Clinchfield & O. Ry., Johnson City, Tenn.
Central of Georgia Ry. Co., Savannah, Ga.
Florida East Coast Rwy., St. Augustine, Fla.
Illinois Central Railroad Co., Chicago, Ill.
Norfolk & Western Railway, Roanoke, Va.
Richmond, Fredericksburg & Potomac Railroad, Ashland, Va.
Seaboard Air Line, Portsmouth, Va.
Southern Railway Co., Washington, D. C.
Tennessee Central Railroad Co., Cookeville, Tenn.
Virginia Railway & Power Co., Richmond, Va.
- Industrial Track Work. (See Railways, etc.)**
- Injectors.**
Jenkins Bros., New York, N. Y.
Sellers & Co., Inc., Wm., Philadelphia, Pa.
- Insulating Materials.**
Johns-Manville Co., H. W., New York, N. Y.
- Insurance.**
Hartford Fire Insurance Co., Hartford, Conn.
Hartford Steam Boiler Inspection & Ins. Co., Hartford, Conn.
Maryland Casualty Co., Baltimore, Md.
- Interior Trim. (Metallic.)**
Dahlstrom Metallic Door Co., Jamestown, N. Y.
U. S. Metal Products Co., New York, N. Y.
- Interstate Commerce Practice.**
Van Sant, Frank, Washington, D. C.
- Iron.**
Alabama Con. Coal & Iron Co., Birmingham, Ala.
American Rolling Mill Co., Middletown, O.
La Belle Iron Works, Steubenville, O.
Milton Mfg. Co., Milton, Pa.
Oliver Iron & Steel Co., Pittsburgh, Pa.
Republic Iron & Steel Co., Youngstown, O.
Tennessee Coal, Iron & R. R. Co., B'gh'm, Ala.
Wood Iron & Steel Co., Alan, Philadelphia, Pa.
- Irrigation Machinery.**
Blakeslee Mfg. Co., Du Quoin, Ill.
Cameron Steam Pump Wks., A. S., New York, N. Y.
- Journals. (Financial.)**
Financial Review, New York, N. Y.
- Kettles. (Steam Jacket.)**
Badger & Sons Co., E. B., Boston, Mass.
Petroleum Iron Works Co., Sharon, Pa.
- Key Seater. (Portable.)**
Burr & Son, John T., Brooklyn, N. Y.
- Knitting Machinery.**
Acme Knitting Machine & Needle Co., Franklin, Pa.
N. H.
- Lacquers. (All Purposes.)**
Durlacher Mfg. Co., St. Louis, Mo.
- Lamp Posts. (Electric, Gas.)**
Western Gas Construction Co., Ft. Wayne, Ind.
- Lamps. (Arc and Incandescent.)**
Boston Incandescent Lamp Co., Danvers, Mass.
Columbia Incandescent Lamp Co., St. Louis, Mo.
Fostoria Incandescent Lamp Co., Fostoria, O.
General Electric Co., Schenectady, N. Y.
Kentucky Electrical Co., Owensboro, Ky.
Lee Electric Co., Baltimore, Md.
Piedmont Electric Co., Asheville, N. C.
Western Electric Co., New York, N. Y.
Westinghouse Elec. & Mfg. Co., Pittsburg, Pa.
- Landa.**
Barr, J. M. C., Philadelphia, Pa.
Fendig & Co., Albert, Brunswick, Ga.
Kimbrough & Co., J. T., Atlanta, Ga.
Nashbaum & Co., S. L., Norfolk, Va.
- Latins. (Expanded Metal.)**
Carolina Portland Cement Co., Charleston, S. C.
Milwaukee Corrugating Co., Milwaukee, Wis.

- Lathes. (Machine.)**
Greaves, Kinsman & Co., Cincinnati, O.
Manning, Maxwell & Moore, Inc., New York, N. Y.
- Lawn Furniture.**
Buller Iron & Wire Works, J. M., Detroit, Mich.
Dyer & Co., Baltimore, Md.
Dyer, Baggott & Co., Baltimore, Md.
- Leadite.**
Leadite Co., The, Philadelphia, Pa.
- Lighting Equipment.**
Belphair Co., Newark, Ohio.
- Lime.**
Carroll Portland Cement Co., Charleston, S. C.
Security Cement & Lime Co., Baltimore, Md.
Southern Lime & Cement Co., Charleston, S. C.
Tidewater Portland Cement Co., Baltimore, Md.
- Lime. (Hydrated.)**
Security Cement & Lime Co., Baltimore, Md.
Tidewater Portland Cement Co., Baltimore, Md.
- Lime Kilns and Equipment.**
Improved Equipment Co., New York, N. Y.
- Limestone Products.**
Security Cement & Lime Co., Baltimore, Md.
- Liquor Filters.**
International Filter Co., Chicago, Ill.
- Lithographers, Engravers.**
Toog & Selden Co., Baltimore, Md.
- Loans.**
Assets Realization Co., Chicago, Ill.
- Lockers. (Metal.)**
Kelley Metal Ceiling Mfg. Co., S., Pittsburg, Pa.
- Locomotives.**
INDUSTRIAL.
American Locomotive Co., New York, N. Y.
Baldwin Locomotive Works, The, Philadelphia, Pa.
Bryn Mawr Co., John F., Ravens, O.
Climax Mfg. Co., Corry, Pa.
Davenport Locomotive Works, Davenport, Ia.
Hawley Locomotive Works, Erie, Pa.
Jeffrey Mfg. Co., Columbus, O.
Lima Locomotive & Machine Co., Lima, O.
Miles Co., Cincinnati, O.
Porter Co., H. K., Pittsburg, Pa.
Valcan Iron Works, Wilkes-Barre, Pa.
- RAILWAY.**
American Locomotive Co., New York, N. Y.
Baldwin Locomotive Works, The, Philadelphia, Pa.
Lima Locomotive & Machine Co., Lima, O.
Miles Co., Cincinnati, O.
Southern Supply Co., Norfolk, Va.
- Looms and Weaving Machinery.**
Draper Co., Hopedale, Mass.
Mason Machine Works, Taunton, Mass.
- Lubricants.**
Albany Lubricating Co., New York, N. Y.
- Lumber.**
Industrial Lumber Co., Elizabeth, La.
Mason & Felton Lumber Co., Macon, Ga.
- Lumber. (Heavy Construction, Pitch Pine, etc.)**
Mason & Felton Lumber Co., Macon, Ga.
National Lumber & Creosote Co., Texarkana, Ark.
Taylor & Co., S. E., Gulfport, Miss.
- Lumber. (Yellow Pine.)**
Industrial Lumber Co., Elizabeth, La.
- Lumber Buggies.**
Sole Steam Feed Works, Meridian, Miss.
- Lumber Stackers.**
Sole Steam Feed Works, Meridian, Miss.
- Machinery. (Special.)**
Bliss Co., E. W., Brooklyn, N. Y.
Bliss, Lewis T., Alpena, Mich.
Lester & Co., Charles, Brooklyn, N. Y.
Oil City Boiler Co., Oil City, Pa.
Raymond Bros. Impact Pulv. Co., Chicago, Ill.
Ryersford Fdry. & Mch. Wks., Ryersford, Pa.
Stratton & Bragg Co., Petersburg, Va.
Universal Telegraphic Co., Baltimore, Md.
- Machinery and Supplies. (New and Second-Hand Bargains.)**
Barton Iron & Metal Co., Baltimore, Md.
Brown, Jas. H., Brooklyn, N. Y.
Chicago House Wrecking Co., Chicago, Ill.
Cleveland Belling & Machinery Co., Cleveland, O.
Crescent Railway Equipment Co., Chicago, Ill.
Dunbar & Son, New York, N. Y.
Hilzer's Sons Co., Henry A., Philadelphia, Pa.
Hyde Bros. & Co., New York, N. Y.
Miles Machinery Co., Chicago, Ill.
Reinhart, H., Pittsburgh, Pa.
Lewine & Co., E., Philadelphia, Pa.
Linton, W. J., New York, N. Y.
Lodge & Shipley Machine Tool Co., Cincinnati, O.
Marine Metal & Supply Co., New York, N. Y.
Mathe Iron & Metal Co., G., St. Louis, Mo.
Pannmiller Engineering Co., Chicago, Ill.
Pickett Co., Inc., H. W., Philadelphia, Pa.
Pipe & Contractors' Supply Co., New York, N. Y.
Pittsburgh Mch. & Equip. Co., Pittsburgh, Pa.
Prentiss Tool & Supply Co., New York, N. Y.
Randle Machinery Co., Cincinnati, O.
Randle Co., Howard W., Philadelphia, Pa.
Richter Machinery Co., New York, N. Y.
Rammel, Frank, Philadelphia, Pa.
Seyfert's Sons, Inc., L. F., Philadelphia, Pa.
Southern Supply Co., Norfolk, Va.
Tampa Machinery Exchange, Tampa, Fla.
Tommy, Frank, Philadelphia, Pa.
Winter Co., Herman L., Philadelphia, Pa.
Pearley, Thomas, Philadelphia, Pa.
- Machine Tools.**
Greaves, Kinsman & Co., Cincinnati, O.
Manning, Maxwell & Moore, Inc., New York, N. Y.
- Machinists. (Engineers.)**
American Mch. & Mfg. Co., Charlotte, N. C.
Roanoke Iron Works, Inc., Roanoke, Va.
Stratton & Bragg Co., Petersburg, Va.
Universal Telegraphic Co., Baltimore, Md.
- Magnesite Materials.**
John-Manville Co., H. W., New York, N. Y.
- Magnesite. (Dead Burned.)**
Bartholomew-Walker Refractories Co., Pittsburg, Pa.
- Magnets. (Electric Lift.)**
Browning Engineering Co., Cleveland, O.
- Magnet Electro. (For Cottonseed, Linters and Ginters.)**
Miles Electro Magnet Co., Memphis, Tenn.
- Magnetic Separators.**
Faxon Co., J. W., Philadelphia, Pa.
- Mail Chutes.**
Cutter Mail Chute Co., Rochester, N. Y.
- Mantels. (Wooden.)**
Northern Mantel Co., W. J., Memphis, Tenn.
- Marble Work. (Interior.)**
Dagostin & Angelini Bros., Montgomery, Ala.
Southern Mosaic Tile Co., Birmingham, Ala.
- Masonry Dams.**
Multiple Arch Hydraulic Const. Co., Ltd., Spartanburg, S. C.
- Mechanical Draft.**
American Blower Co., Detroit, Mich.
Buffalo Steam Pump Co., Buffalo, N. Y.
Sturtevant Co., B. F., Hyde Park, Mass.
- Metal Ceilings. (See Ceilings, Metal.)**
- Metaline.**
North Amer. Metaline Co., Long Island City, N. Y.
- Metal Culverts. (See Culverts.) (Corrugated Metal.)**
- Metal Polish.**
Hoffman, Geo. W., Indianapolis, Ind.
- Metal Shingles.**
Burris & Co., John T., Anderson, S. C.
Chattanooga Mfg. & Fdry. Co., Chattanooga, Tenn.
Cincinnati Sheet Metal & Rfg. Co., Cincinnati, O.
Corrington Metal Roofing Co., Philadelphia, Pa.
Edwards Manufacturing Co., Cincinnati, O.
Hyndman Roofing Co., Cincinnati, O.
- Metal Window Frames and Sashes.**
Detroit Steel Products Co., Detroit, Mich.
Edwards Mfg. Co., The, Cincinnati, O.
Kelley Metal Cell. & Mfg. Co., S., Pittsburg, Pa.
United States Metal Products Co., New York, N. Y.
Volkmann & Co., Chicago, Ill.
- Metal Work. (Stamped and Embossed Hotel Checks, Key Tags, etc.)**
American Railway Supply Co., New York, N. Y.
- Metal-Working Machinery.**
Bertsch & Co., Cambridge City, Ind.
Bliss Co., E. W., Brooklyn, N. Y.
Gibbs Machinery Co., Columbia, S. C.
Lester & Co., Chan., Brooklyn, N. Y.
Price Machinery Co., S. M., Norfolk, Va.
Ryersford Fdry. & Mch. Co., Ryersford, Pa.
- Micrometers, Calipers, Etc.**
Starrett Co., L. S., Athol, Mass.
- Milk Filters. (Liquor, Milk, etc.)**
International Filter Co., Chicago, Ill.
- Mill Engineers and Architects.**
Lockwood, Greene & Co., Boston, Mass.
Stirling, J. E., Greenville, S. C.
- Mill Supplies.**
Appomattox Iron Wks. & Sup. Co., Petersburg, Va.
Bailey-Lebby Co., Charleston, S. C.
Cameron & Barkley Co., Charleston, S. C.
Gainesville Iron Works, Gainesville, Ga.
Greenwald Co., J. & E., Cincinnati, O.
Lindsay, J. L., Inc., Richmond, Va.
Lombard Iron Works, Augusta, Ga.
Manning, Maxwell & Moore, Inc., New York, N. Y.
Mecklenburg Iron Works, Charlotte, N. C.
Nordyke & Marmoon Co., Indianapolis, Ind.
Salem Foundry & Machine Works, Salem, Va.
Smith-Courtney Co., Richmond, Va.
Starr Co., B. F., Baltimore, Md.
Stratton & Bragg Co., Petersburg, Va.
Ward-Becke Co., Washington, D. C.
Wolf Co., Chambersburg, Pa.
- Mining Machinery. (Gold, Copper, Plate, etc.)**
Bartlett & Snow Co., C. O., Cleveland, O.
Jeffrey Mfg. Co., Columbus, O.
McLanahan-Stone Mach. Co., Hollidaysburg, Pa.
Mecklenburg Iron Works, Charlotte, N. C.
Power & Mining Machinery Co., Cudahy, Wis.
Raymond Bros. Impact Pulv. Co., Chicago, Ill.
- Mixer Machinery.**
Smith Co., T. L., Atlanta, Ga.
- Mixing Machinery.**
Dunning, W. D., Syracuse, N. Y.
Lynn-Superior Co., The, Cincinnati, O.
- Mortar Colors.**
Chattanooga Paint Co., Chattanooga, Tenn.
- Motor Trucks.**
Schacht Motor Car Co., Cincinnati, Ohio.
- Mouldings, Casings, etc.**
Mason & Felton Lumber Co., Macon, Ga.
- Nails and Spikes.**
American Steel & Wire Co., Chicago, Ill.
Hoffman & Co., B. C., Baltimore, Md.
Republic Iron & Steel Co., Youngstown, O.
West Virginia Rail Co., The, Huntington, W. Va.
Youngstown Sheet & Tube Co., Youngstown, O.
- Nitre Pots, Etc.**
Pratt Engineering & Mach. Co., Atlanta, Ga.
- Nuts. (See Bolts, Nuts, Rivets, etc.)**
- Office Furniture.**
Rose & Thompson, Baltimore, Md.
- Oil. (Lubricating, etc.)**
Albany Lubricating Co., New York, N. Y.
Borne-Schrymer Co., New York, N. Y.
Galena Signal Oil Co., Franklin, Pa.
Gulf Refining Co., Pittsburg, Pa.
Robinson & Son Co., Wm. C., Baltimore, Md.
Texas Co., The, New York, N. Y.
- Oil-Burning Appliances.**
Petroleum Iron Works Co., Sharon, Pa.
- Oil Cans.**
Wall Mfg. Supply Co., F., Allegheny, Pa.
- Oil Engines. (See Engines (Oil).)**
- Oil Separators.**
Stewart Heater Co., Buffalo, N. Y.
- Oil Stoves.**
Carborundum Co., Niagara Falls, N. Y.
Norton Co., Worcester, Mass.
- Oil-Well Machinery.**
Keystone Steam Well Mach. Co., Beaver Falls, Pa.
Williams Bros., Ithaca, N. Y.
- Ore Briquetting Machinery.**
Devilica, Robert, Brooklyn, N. Y.
- Ornamental Iron Work.**
Belmont Iron Works, Inc., Philadelphia, Pa.
Bolles Iron & Wire Works, J. E., Detroit, Mich.
Chattanooga Iron & Wire Wks., Chattanooga, Tenn.
Chesapeake Iron Works, Baltimore, Md.
Dow Wire Works Co., Louisville, Ky.
Oble Elevator & Machine Co., The, Columbus, O.
Roanoke Iron Works, Inc., Roanoke, Va.
Schreiber & Sons Co., The, L., Cincinnati, O.
Sneed Architectural Iron Works, Louisville, Ky.
Southern Wire & Iron Mfg. Co., Dallas, Tex.
- Packing. (Asbestos, Metallic, Rubber, Leather, etc.)**
American Huhn Packing Co., New York, N. Y.
Jenkins Bros., New York, N. Y.
John-Manville Co., H. W., New York, N. Y.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
Power Specialty Co., New York, N. Y.
- Paint. (Bridge.)**
Detroit Graphite Co., Detroit, Mich.
Dixon Crucible Co., Jos., Jersey City, N. J.
Linsine Co., Philadelphia, Pa.
National Roofing Co., Tonawanda, N. Y.
- Paints. (Cold Water.)**
Wilhelm Co., A., New York, N. Y.
- Paint. (Metal Preservative.)**
Detroit Graphite Co., Detroit, Mich.
Linsine Co., Philadelphia, Pa.
National Roofing Co., Tonawanda, N. Y.
Wilhelm Co., A., New York, N. Y.
- Paint. (Roofing, Building, etc.)**
Armstrong Mfg. Co., The, Richmond, Va.
Bird & Son, F. W., East Walpole, Mass.
Cameron & Barkley Co., Charleston, S. C.
Chattanooga Paint Co., Chattanooga, Tenn.
Detroit Graphite Co., Detroit, Mich.
Dixon Crucible Co., Jos., Jersey City, N. J.
Glidden Varnish Co., Cleveland, O.
Linsine Co., Philadelphia, Pa.
National Roofing Co., Tonawanda, N. Y.
Standard Paint Co., New York, N. Y.
Wilhelm Co., A., New York, N. Y.
- Painting. (Contractors for Bridges, Buildings, etc.)**
Dinaco & Bro., A., Pittsburg, Pa.
- Paint-making Machinery.**
Campbell, P. F., Philadelphia, Pa.
Lynn Superior Co., The, Cincinnati, O.
- Paper. (Roofing, Building, Sheathing, etc.)**
Armstrong Mfg. Co., Richmond, Va.
Bird & Son, F. W., East Walpole, Mass.
Cameron & Barkley Co., Charleston, S. C.
Southeastern Lime & Cement Co., Charleston, S. C.
Standard Roofing Co., Tulsa, Okla.
- Passenger Coach Steps. (Extension.)**
Blake Car Step Works, Charlotte, N. C.
- Patent Attorneys.**
Brown, Eugene G., Washington, D. C.
Chandler & Co., H. Ellis, Washington, D. C.
Chandler & Chandler, Washington, D. C.
Evans & Co., Victor J., Washington, D. C.
Owen, Richard B., Washington, D. C.
- Patterns.**
Roanoke Iron Works, Inc., Roanoke, Va.
- Pavement Filler.**
Barrett Mfg. Co., Philadelphia, Pa.
- Paving. (Contractors for Cressed Wood Block.)**
Cressed Wood Block Pav. Co., New Orleans, La.
- Paving Blocks. (Granite.)**
Harris Granite Quarries Co., Salisbury, N. C.
- Paving Blocks. (Wood Cress-Resinate.)**
Gulfport Cressed Wood, Gulfport, Miss.
Southern Wood Preserving Co., Atlanta, Ga.
U. S. Wood Preserving Co., New York, N. Y.
- Paving Brick.**
Carlyle Paving Brick Co., Portsmouth, O.
Copeland-Ingalls Shale Brick Co., Birm'gh'm, Ala.
- Paving Machines. (Bituminous Materials.)**
Smith Co., T. L., Atlanta, Ga.
- Perforated Metal.**
Caldwell & Son, H. W., Chicago, Ill.
Erdle Perforating Co., Rochester, N. Y.
Hendrick Mfg. Co., The, Carbondale, Pa.
Mundt & Sons, Charles, Jersey City, N. J.
- Perspectives. (Water Color, for Architects.)**
Alger & Smith, Atlanta, Ga.
- Petroleum Refiners.**
Gulf Refining Co., Pittsburg, Pa.
Standard Oil Co., Cincinnati, O.
- Phosphate Machinery.**
Aising Engineering Co., J. R., New York, N. Y.
American Process Co., New York, N. Y.
Bailey-Lebby Co., The, Charleston, S. C.
Cameron & Barkley Co., Charleston, S. C.
Link-Belt Co., Nicetown (Philadelphia), Pa.
McLanahan-Stone Mach. Co., Hollidaysburg, Pa.
Pratt Engineering & Mach. Co., Atlanta, Ga.
Raymond Bros. Impact Pulv. Co., Chicago, Ill.
Walker & Murdoch Iron Works, Charleston, S. C.
Walker & Elliott, Wilmington, Del.
- Phosphor-Bronze. (Wire Rods, Sheets.)**
Phosphor-Bronze Smelting Co., Philadelphia, Pa.
- Photo-Engravers.**
Baltimore Maryland Engr. Co., Baltimore, Md.
- Pig Iron.**
Alabama Con. Coal & Iron Co., Birmingham, Ala.
La Belle Iron Works, Steubenville, O.
Republic Iron & Steel Co., Youngstown, O.
Rogers, Brown & Co., Cincinnati, O.
Tennessee Coal, Iron & R. R. Co., B'm'gh'm, Ala.
- Pile Drivers.**
Browning Engineering Co., Cleveland, O.
Bryant Co., Milwaukee, Wis.
Volcan Iron Works, Chicago, Ill.
- Piling. (Cressed.)**
Gulfport Cressed Wood, Gulfport, Miss.
Intern'l Cressed Wood & Const. Co., Galveston, Tex.
Southern Cressed Wood, Ltd., Slidell, La.
- Pillow Blocks.**
Caldwell Co., Inc., W. E., Louisville, Ky.
Dodge Manufacturing Co., Mishawaka, Ind.
Golden's Foundry & Machine Co., Columbus, Ga.
- Pine Tar.**
Atlantic Tarpestine & Resin Co., Savannah, Ga.
- Pipe. (Cast Iron.)**
American Cast Iron Pipe Co., Birmingham, Ala.
American Pipe & Construction Co., Phila., Pa.
Glamorgan Pipe & Foundry Co., Lynchburg, Va.
McWane Pipe Works, Lynchburg, Va.
U. S. Cast Iron Pipe Fdry. Co., New York, N. Y.
Wood & Co., E. D., Philadelphia, Pa.
- Pipe. (Coll.)**
Columbus Iron Works Co., Columbus, Ga.
Frick Co., The, Waynesboro, Pa.
National Pipe Bending Co., New Haven, Conn.
Whitlock Coil Pipe Co., Hartford, Conn.
York Mfg. Co., York, Pa.
- Pipe. (Corrugated Culvert.)**
American Rolling Mill Co., Middletown, O.
Canton Culvert Co., The, Canton, O.
Dixie Culvert & Metal Co., Atlanta, Ga.
Gallon Iron Works Co., Gallon, O.
Harry Steel Co., O. K., St. Louis, Mo.
Kentucky Culvert Mfg. Co., Buechel, Ky.
North Carolina Metal Culv. Co., Greensboro, N. C.
Virginia Metal Culvert Co., Roanoke, Va.
Virginia Railway Supply Co., Norfolk, Va.
- Pipe. (Riveted.)**
Abendroth & Root Mfg. Co., Newburgh, N. Y.
Keeler Co., H., Williamsport, Pa.
Petroleum Iron Works Co., Sharon, Pa.
Ruemmel-Dawley Mfg. Co., St. Louis, Mo.
- Pipe. (Spiral Riveted.)**
Abendroth & Root Mfg. Co., Newburgh, N. Y.
American Spiral Pipe Works, Chicago, Ill.
- Pipe. (Wood.)**
Wyckoff & Son Co., A., Elmira, N. Y.
- Pipe. (Wrought.)**
La Belle Iron Works, Steubenville, O.
National Tube Co., Pittsburg, Pa.
Youngstown Sheet & Tube Co., Youngstown, O.
- Pipe Bends.**
Columbus Iron Works Co., Columbus, Ga.
Whitlock Coil Pipe Co., Hartford, Conn.
- Pipe Covering. (Steam.)**
John-Manville Co., H. W., New York, N. Y.
Southern Pipe Covering Co., Inc., Richmond, Va.
Wyckoff & Son Co., A., Elmira, N. Y.
- Pipe Cutting and Threading Machinery.**
Saunders' Sons, D., Yonkers, N. Y.
- Pipe Fittings.**
American Cast Iron Pipe Co., Birmingham, Ala.
Columbus Iron Works Co., Columbus, Ga.
York Mfg. Co., York, Pa.
- Pipe Jo'nting. (Gas and Water Main.)**
Leadite Co., Inc., Philadelphia, Pa.
- Pipe Locator.**
Modern Iron Works, Quincy, Ill.
- Pipe Unions and Joints.**
Dart Mfg. Co., E. M., Providence, R. I.
National Tube Co., Pittsburg, Pa.
Whitlock Coil Pipe Co., Hartford, Conn.
- Pipe Wrenches and Cutters.**
Saunders' Sons, D., Yonkers, N. Y.
- Pitch.**
Barrett Mfg. Co., Philadelphia, Pa.
- Planers. (Metal.)**
Manning, Maxwell & Moore, Inc., New York, N. Y.
- Planing Mill Work.**
Mason & Felton Lumber Co., Macon, Ga.
- Plaster of Paris.**
King & Co., J. B., New York, N. Y.
- Plaster.**
Security Cement & Lime Co., Baltimore, Md.
- Plaster. (Asbestos Cement, Plaster of Paris.)**
King & Co., J. B., New York, N. Y.
- Plaster Boards.**
Hercules Plaster Board Co., Hampton, Va.
King & Co., J. B., New York, N. Y.
- Plaster Machinery.**
Bartlett & Snow Co., C. O., Cleveland, O.
- Plates.**
Cincinnati Iron & Steel Co., Cincinnati, O.
Wood Iron & Steel Co., Alan, Philadelphia, Pa.
- Plugs. (Wall.)**
Wicks & Co., Milton O., Glen Cove, N. Y.
- Pneumatic Tools. (See Tools—Pneumatic.)**
- Polishing Machinery. (Wheels and Blocks.)**
Abrasive Material Co., Philadelphia, Pa.
Carborundum Co., Niagara Falls, N. Y.
Vitrified Wheel Co., Westfield, Mass.
- Power Transmission Machinery.**
Bailey-Lebby Co., Charleston, S. C.
Brown Co., A. & F., New York, N. Y.
Caldwell Co., Inc., W. E., Louisville, Ky.
Caldwell & Son Co., H. W., Chicago, Ill.
Crescent Co., Geo. V., Philadelphia, Pa.
Dayton Globe Iron Works Co., Dayton, O.
Dodge Manufacturing Co., Mishawaka, Ind.
Golden's Foundry & Machine Co., Columbus, Ga.
Greenwald Co., L. & E., Cincinnati, O.
Jeffrey Mfg. Co., Columbus, O.
Jones & Laughlin Steel Co., Pittsburg, Pa.
Lane Mfg. Co., Montpelier, Vt.
Lindsay, J. L., Inc., Richmond, Va.
Link-Belt Co., Nicetown (Philadelphia), Pa.
Morris Chain Co., Ithaca, N. Y.
Nordyke & Marmoon Co., Indianapolis, Ind.
Poole Engineering & Machine Co., Baltimore, Md.
Positive Clutch & Pulley Works, Buffalo, N. Y.
Price Machinery Co., S. M., Norfolk, Va.
Schneider's Sons Co., J. B., Macon, Ga.
Wolf Co., The, Chambersburg, Pa.
Wood's Sons Co., T. B., Chambersburg, Pa.
- Presses. (Baling, Cottonseed Oil, etc., Hydraulic and Power.)**
Boomer & Boechert Press Co., Syracuse, N. Y.
Cardwell Machine Co., Richmond, Va.
Continental Oil Co., Birmingham, Ala.
Gibbs Machinery Co., Columbia, S. C.
- Presses. (Stamping.)**
Bliss Co., E. W., Brooklyn, N. Y.
Lester & Co., Charles, Brooklyn, N. Y.
- Preventive for Sap Stain.**
Church & Dwight Co., New York, N. Y.
- Printers. (Book, Catalog, Job, etc.)**
Fleet-McGlinchey Co., Baltimore, Md.
Franklin Press Co., Petersburg, Va.

- Promoters.**
Assets Realization Co., Chicago, Ill.
Electric Bond & Share Co., New York.
- Protector Steel.** (Concrete Curb, Steps, etc.)
Steel Protected Concrete Co., Philadelphia, Pa.
- Pulleys.** (Friction Clutch.)
Brown Co., A. & F., New York, N. Y.
Caldwell Co., Inc., W. E., Louisville, Ky.
Caldwell & Son Co., H. W., Chicago, Ill.
Cresson Co., Geo. V., Philadelphia, Pa.
Dodge Manufacturing Co., Mishawaka, Ind.
Foote Engineering & Machine Co., Baltimore, Md.
Positive Clutch & Pulley Works, Buffalo, N. Y.
Rinclair-Scott Co., Baltimore, Md.
Woods' Sons Co., T. B., Chambersburg, Pa.
- STEEL SPLIT.**
American Pulley Co., Philadelphia, Pa.
Dodge Manufacturing Co., Mishawaka, Ind.
- WOOD SPLIT.**
Caldwell Co., Inc., W. E., Louisville, Ky.
Caldwell & Son Co., H. W., Chicago, Ill.
Dodge Manufacturing Co., Mishawaka, Ind.
Lane Mfg. Co., Montpelier, Vt.
Positive Clutch & Pulley Works, Buffalo, N. Y.
Saginaw Mfg. Co., Saginaw, Mich.
Salem Foundry & Machine Works, Salem, Va.
- Pulleys, Shafting and Hangers.**
Caldwell Co., Inc., W. E., Louisville, Ky.
Caldwell & Son Co., H. W., Chicago, Ill.
Cresson Co., Geo. V., Philadelphia, Pa.
Dodge Manufacturing Co., Mishawaka, Ind.
Golden's Foundry & Machine Co., Columbus, Ga.
Greenwald Co., L. & B., Cincinnati, O.
Jeffrey Mfg. Co., Columbus, O.
Jones & Laughlin Steel Co., Pittsburgh, Pa.
Lane Mfg. Co., Montpelier, Vt.
Link-Belt Co., Nictown (Philadelphia), Pa.
Wordyke & Marmon Co., Indianapolis, Ind.
Poole Engineering & Machine Co., Baltimore, Md.
Positive Clutch & Pulley Works, Buffalo, N. Y.
Standard Roller Bearing Co., Philadelphia, Pa.
Woods' Sons Co., T. B., Chambersburg, Pa.
- Pumps.** (Centrifugal.)
Alberger Pump Co., New York, N. Y.
Buffalo Steam Pump Co., Buffalo, N. Y.
De Laval Steam Turbine Co., Trenton, N. J.
Emerson Steam Pump Co., Alexandria, Va.
Erie Pump & Engine Works, Erie, Pa.
Goulds Mfg. Co., Seneca Falls, N. Y.
Haydon Pump Co., Quincy, Ill.
Morris Machine Works, Baldwinville, N. Y.
Wood & Co., R. D., Philadelphia, Pa.
Worthington, H. R., New York, N. Y.
- Pumps.** (Deep Well.)
McGowan Co., John H., Cincinnati, O.
- Pumps.** (Hydraulic.)
Buffalo Steam Pump Co., Buffalo, N. Y.
Caldwell Machine Co., Richmond, Va.
Dean Bros. Steam Pump Wks., Indianapolis, Ind.
Emerson Steam Pump Co., Alexandria, Va.
Erie Pump & Engine Works, Erie, Pa.
Goulds Mfg. Co., Seneca Falls, N. Y.
Worthington, H. R., New York, N. Y.
- Pumps.** (Lift and Force.)
Goulds Mfg. Co., Seneca Falls, N. Y.
Ingersoll-Rand Co., New York, N. Y.
- Pumps.** (Odorous and Excavating.)
Goulds Mfg. Co., Seneca Falls, N. Y.
- Pumps.** (Pneumatic.)
Ingersoll-Rand Co., New York, N. Y.
- Pumps.** (Boiler Feed.)
Alberger Pump Co., New York, N. Y.
Cameron Steam Pump Wks., A. S., New York, N. Y.
Dean Bros. Steam Pump Wks., Indianapolis, Ind.
Goulds Mfg. Co., Seneca Falls, N. Y.
McGowan Co., John H., Cincinnati, O.
Moffatt Machinery Mfg. Co., Charlotte, N. C.
Murray Iron Works Co., Burlington, Ia.
Myers & Bros., F. E., Ashland, O.
Union Steam Pump Co., Battle Creek, Mich.
Worthington, H. R., New York, N. Y.
- Pumps.** (Rotary.)
Goulds Mfg. Co., Seneca Falls, N. Y.
- Pumps.** (Steam.)
Blakelock Mfg. Co., Du Quoin, Ill.
Buffalo Steam Pump Co., Buffalo, N. Y.
Cameron Steam Pump Wks., A. S., New York, N. Y.
Cameron & Barkley Co., Charleston, S. C.
Cook Well Co., The, St. Louis, Mo.
Dean Bros. Steam Pump Wks., Indianapolis, Ind.
Deane Steam Pump Co., Holyoke, Mass.
Gardner Governor Co., Quincy, Ill.
Jones Machinery Co., Columbus, S. C.
Goulds Mfg. Co., Seneca Falls, N. Y.
Hooven, Owen, Rentschler Co., Hamilton, O.
Keystone Pump & Well Engine Co., Beaver Falls, Pa.
Keystone Pump & Well Eng. Co., Beaver Falls, Pa.
McGowan Co., John H., Cincinnati, O.
Murray Iron Works Co., Burlington, Ia.
Price Machinery Co., S. M., Norfolk, Va.
Syndor Pump & Well Co., Richmond, Va.
Union Steam Pump Co., Battle Creek, Mich.
Wood & Co., R. D., Philadelphia, Pa.
Worthington, H. R., New York, N. Y.
- Pumps.** (Trench.)
Goulds Mfg. Co., Seneca Falls, N. Y.
- Pumps.** (Vacuum.)
Alberger Pump Co., New York, N. Y.
Dean Bros. Steam Pump Wks., Indianapolis, Ind.
Goulds Mfg. Co., Seneca Falls, N. Y.
Smith Co., T. L., Atlanta, Ga.
Union Steam Pump Co., Battle Creek, Mich.
- Pumps.** (Water-works.)
McGowan Co., John H., Cincinnati, O.
- Pumping Machinery.**
Allis-Chalmers Co., Milwaukee, Wis.
Blakelock Mfg. Co., Du Quoin, Ill.
Cameron Steam Pump Wks., A. S., New York, N. Y.
Cook Well Co., The, St. Louis, Mo.
Dean Bros. Steam Pump Wks., Indianapolis, Ind.
Deane Steam Pump Co., Holyoke, Mass.
Deming Co., Salem, O.
Erie Pump & Engine Works, Erie, Pa.
Fairbanks, Morse & Co., Chicago, Ill.
Goulds Mfg. Co., Seneca Falls, N. Y.
Hooven, Owen, Rentschler Co., Hamilton, O.
Keystone Pump & Well Eng. Co., Beaver Falls, Pa.
McGowan Co., John H., Cincinnati, O.
Moffatt Machinery Mfg. Co., Charlotte, N. C.
Morris Machine Works, Baldwinville, N. Y.
Myers & Bros., F. E., Ashland, O.
Syndor Pump & Well Co., Richmond, Va.
Union Steam Pump Co., Battle Creek, Mich.
Wood & Co., R. D., Philadelphia, Pa.
Worthington, H. R., New York, N. Y.
- Punching and Shearing Machinery.**
Bertsch & Co., Cambridge City, Ind.
Bliss Co., E. W., Brooklyn, N. Y.
Boyersford Foundry & Mach. Co., Boyersford, Pa.
- Pyrites Burners.**
Pratt Engineering & Mach. Co., Atlanta, Ga.
- Quarrying and Stonecutting Machinery.**
Ingersoll-Rand Co., New York, N. Y.
- Railings, Grilles, etc. (Brass.)**
McKenna Bros. Brass Co., Pittsburgh, Pa.
- Railroads.** (Agricultural and Industrial Opportunities.) [See Industrial, Agricultural and Commercial Opportunities.]
- Railroad Equipment and Supplies.** (New and Second-hand.)
American Frog & Switch Co., Hamilton, O.
American Locomotive Co., New York, N. Y.
American Vair & Meter Co., Cincinnati, O.
Bailey-Lebby Co., The, Charleston, S. C.
Baldwin Equipment & Supply Co., Chicago, Ill.
Benjamin Equip. Co., Harry, St. Louis, Mo.
Birmingham Rail & Loco. Co., Birmingham, Ala.
Boston Iron & Metal Co., Baltimore, Md.
Cincinnati Frog & Switch Co., Cincinnati, O.
Foster Co., L. B., Pittsburg, Pa.
Georgia Car & Locomotive Co., Atlanta, Ga.
Hoffman & Co., R. C., Baltimore, Md.
Indiana Steel & Iron Co., Pittsburg, Pa.
Kilby Frog & Switch Co., Birmingham, Ala.
Macleary, J. H., Suffolk, Va.
Males Co., Cincinnati, O.
Manning, Maxwell & Moore, Inc., New York, N. Y.
Maryland Equipment & Supply Co., Baltimore, Md.
Mathies Iron & Metal Co., G. St. Louis, Mo.
May & Turner Co., Atlanta, Ga.
National Iron & Steel Co., Houston, Tex.
Newhall Eng. Co., Geo. M., Philadelphia, Pa.
Pickett Co., Inc., H. W., Philadelphia, Pa.
Q & C Co., New York, N. Y.
Read Co., H. W., Philadelphia, Pa.
Robinson & Orr, Pittsburg, Pa.
Sherwood, E. C., New York, N. Y.
Smith-Courtney Co., Richmond, Va.
Southern Iron & Equipment Co., Atlanta, Ga.
Southern Supply Co., Norfolk, Va.
Steel Rail Supply Co., The, New York, N. Y.
United States Rail Co., Cumberland, Md.
Vulcan Iron Works, Wilkes-Barre, Pa.
Weir Frog Co., Cincinnati, O.
West Virginia Rail Co., The, Huntington, W. Va.
Wilson & Co., E. H., Philadelphia, Pa.
Zelicker Supply Co., Walter A., St. Louis, Mo.
- Railroad Frogs and Switches.**
American Frog & Switch Co., Hamilton, O.
Cincinnati Frog & Switch Co., Cincinnati, O.
Kilby Frog & Switch Co., Birmingham, Ala.
Mathies Iron & Metal Co., G. St. Louis, Mo.
May & Turner Co., Atlanta, Ga.
Robinson & Orr, Pittsburg, Pa.
Sweet's Steel Co., Williamsport, Pa.
Weir Frog Co., Cincinnati, O.
- Railroad Tie.** (Reinforced Concrete.)
Universal Concrete Tie Co., New Orleans, La.
- Rails.** (Steel.)
Baldwin Equipment & Supply Co., Chicago, Ill.
Carnegie Steel Co., Pittsburg, Pa.
Foster Co., L. B., Pittsburg, Pa.
Franka, J. E., Atlanta, Ga.
Hoffman & Co., R. C., Baltimore, Md.
Hyde Bros. & Co., Pittsburg, Pa.
Indiana Steel & Iron Co., Pittsburg, Pa.
Levis & Co., Henry, Philadelphia, Pa.
Macleary, J. H., Suffolk, Va.
Mathies Iron & Metal Co., G. St. Louis, Mo.
May & Turner Co., Atlanta, Ga.
National Iron & Steel Co., Houston, Tex.
Newhall Eng. Co., Geo. M., Philadelphia, Pa.
Republic Iron & Steel Co., Youngstown, O.
Robinson & Orr, Pittsburg, Pa.
Sherwood, E. C., New York, N. Y.
Southern Iron & Equipment Co., Atlanta, Ga.
Steel Rail Supply Co., The, New York, N. Y.
Sweet's Steel Co., Williamsport, Pa.
Tennessee Coal, Iron & R. R. Co., B'gh'm, Ala.
United States Rail Co., Cumberland, Md.
West Virginia Rail Co., The, Huntington, W. Va.
Wilson & Co., E. H., Philadelphia, Pa.
Zelicker Supply Co., Walter A., St. Louis, Mo.
- Rail Braces, Crossings, etc.** [See R. R. Frogs and Switches.]
- Rail Joints.**
Q & C Co., New York, N. Y.
- Railways.** (Industrial.)
Chase Fdry. & Mfg. Co., Columbus, O.
Hunt Co., O. W., West New Brighton, N. Y.
Link-Belt Co., Nictown (Philadelphia), Pa.
- Rams.** (Hydraulic.) [See Hydraulic Rams.]
- Reamers.**
Morse Twist Drill & Mach. Co., New Bedford, Mass.
- Reflectors.**
Holophane Co., Newark, Ohio.
- Refrigerating Machinery and Supplies.**
American Hub Packing Co., New York, N. Y.
- Reinforcing Bars.**
Carnegie Steel Co., Pittsburg, Pa.
Concrete-Steel Co., New York, N. Y.
Concrete Steel Engineering Co., New York, N. Y.
Franklin Steel Co., Franklin, Pa.
- Repairing.** (Power Plants.)
Strickland Mch. Co., Richmond, Va.
- Riveters.** (Pneumatic.)
Chicago Pneumatic Tool Co., Chicago, Ill.
Independent Pneumatic Tool Co., Chicago, Ill.
Ingersoll-Rand Co., New York, N. Y.
- Road Machinery.**
Austin-Western Co., Ltd., The, Chicago, Ill.
Blount, C. F., Atlanta, Ga.
Buffalo Steam Roller Co., Buffalo, N. Y.
Case Threshing Mach. Co., J. I., Racine, Wis.
Gallon Iron Works Co., Gallon, O.
Iroquois Iron Works, Buffalo, N. Y.
Kelly Springfield Road Roller Co., Springfield, O.
Syracuse Chilled Plow Co., Syracuse, N. Y.
Universal Road Mch. Co., Kingston, N. Y.
Western Wheel Scraper Co., Aurora, Ill.
- Roadmaking Materials.**
Standard Oil Co., Inc., Road Oil Dept.
Texas Co., The, New York, N. Y.
- Road Roller.** (Steam.)
Austin-Western Co., Ltd., The, Chicago, Ill.
Buffalo Steam Roller Co., Buffalo, N. Y.
Case Threshing Mach. Co., J. I., Racine, Wis.
Iroquois Iron Works, Buffalo, N. Y.
Kelly Springfield Road Roller Co., Springfield, O.
Universal Road Mch. Co., Kingston, N. Y.
- Road Oil.**
Gulf Refining Co., Pittsburg, Pa.
Prime White Road Oil Co., Cincinnati, O.
Standard Oil Co., Inc., Road Oil Dept.
Texas Co., The, New York, N. Y.
- Road Plows.**
Case Threshing Mach. Co., J. I., Racine, Wis.
Syracuse Chilled Plow Co., Syracuse, N. Y.
- Road Preservative.**
Gulf Refining Co., Pittsburg, Pa.
Standard Oil Co., Inc., Road Oil Dept.
Texas Co., The, New York, N. Y.
- Rock Crushers.** [See Crushers, Rock.]
- Roll Grinding and Corrugating.** (Flour Mills.)
Veatch & Co., L. R., Louisville, Ky.
- Rolled Metal Shapes.** (For Building Material Manufacturers.)
United States Metal Products Co., New York, N. Y.
- Rolls.** (Bending and Straightening.)
Bertsch & Co., Cambridge City, Ind.
- Roofers' and Tinner's Supplies.**
Merchant & Evans Co., Philadelphia, Pa.
- Roofing.** (Contractors for Laying.)
Dinaco & Bro., A., Pittsburg, Pa.
- Roofing.** (Felt, Tar, Asbestos, Asphalt, Tin, etc.)
Allen, Herbert F. L., Washington, D. C.
American Sheet & Tin Plate Co., Pittsburgh, Pa.
Armistage Mfg. Co., Richmond, Va.
Asphalt Ready Roofing Co., New York, N. Y.
Barber Asphalt Paving Co., Philadelphia, Pa.
Bird & Son, F. W., East Walpole, Mass.
Cameron & Barkley Co., Charleston, S. C.
Carolina Portland Cement Co., Charleston, S. C.
Cincinnati Sheet Metal & Rfg. Co., Cincinnati, O.
John-Manville Co., H. W., New York, N. Y.
National Roofing Co., Tonawanda, N. Y.
Standard Paint Co., New York, N. Y.
Standard Roofing Co., Tulsa, Okla.
- Roofing.** (Cement.)
Carey Mfg. Co., Philip, Cincinnati, O.
- Roofing.** (Metal Shingles.) [See Shingles, Metal.]
Cincinnati Sheet Metal & Rfg. Co., Cincinnati, O.
Corrigan Sheet Metal Roofing Co., Philadelphia, Pa.
Edwards Mfg. Co., The, Cincinnati, O.
Milwaukee Corrugating Co., Milwaukee, Wis.
- Roofing.** (Slate.)
East Bangor Consol. Slate Co., East Bangor, Pa.
Galt & Sons, John, New York, N. Y.
Genuine Bangor Slate Co., Bangor, Pa.
Hower, J. K., Slatington, Pa.
Johnson, E. J., New York, N. Y.
- Roofing Tile.**
National Roofing Tile Co., Lima, O.
- Roofing and Siding.** (Bird Band and Chipped Slate Surfaced.)
Birmingham & Seaman Co., Chicago, Ill.
- Roofing and Siding.** (Flexible Cement, Bur-lap Inserted.)
Birmingham & Seaman Co., Chicago, Ill.
- Roofing and Siding.** (Metal.)
American Rolling Mill Co., Middletown, O.
American Sheet & Tin Plate Co., Pittsburgh, Pa.
Cameron & Barkley Co., Charleston, S. C.
Cincinnati Sheet Metal & Rfg. Co., Cincinnati, O.
Corrigan Sheet Metal Roofing Co., Philadelphia, Pa.
Edwards Mfg. Co., The, Cincinnati, O.
Hyndman Roofing Co., Cincinnati, O.
Milwaukee Corrugating Co., Milwaukee, Wis.
New Orleans Rfg. & Metal Wks., New Orleans, La.
Tennessee Metal Culvert Co., Nashville, Tenn.
Youngstown Sheet & Tube Co., Youngstown, O.
- Rope.**
American Mfg. Co., New York, N. Y.
Broderick & Bascom Rope Co., St. Louis, Mo.
Columbian Rope Co., Auburn, N. Y.
Plymouth Cordage Co., North Plymouth, Mass.
Turner Co., J. Spencer, New York, N. Y.
Whitlock Cordage Co., New York, N. Y.
- Rope.** (Transmission and Hoisting.)
American Mfg. Co., New York, N. Y.
American Steel & Wire Co., Chicago, Ill.
Broderick & Bascom Rope Co., St. Louis, Mo.
Caldwell Co., Inc., W. E., Louisville, Ky.
Columbian Rope Co., Auburn, N. Y.
Dodge Manufacturing Co., Mishawaka, Ind.
Hunt Co., C. W., West New Brighton, N. Y.
Plymouth Cordage Co., North Plymouth, Mass.
Whitlock Cordage Co., New York, N. Y.
Wood's Sons Co., T. B., Chambersburg, Pa.
- Rope Drives.**
Brown Co., A. & F., New York, N. Y.
Caldwell Co., Inc., W. E., Louisville, Ky.
Caldwell & Son, H. W., Chicago, Ill.
Cresson Co., Geo. V., Philadelphia, Pa.
Dodge Manufacturing Co., Mishawaka, Ind.
Jones & Laughlin Steel Co., Philadelphia, Pa.
Wood's Sons Co., T. B., Chambersburg, Pa.
- Rope Machinery.**
Haskell-Dawes Machine Co., Boston, Mass.
- Rubber Goods.**
Eureka Fire Hose Mfg. Co., New York, N. Y.
New Jersey Car Sp'g & Rub. Co., Jersey City, N. J.
- Rules.** (Steel.)
Lufkin Rule Co., The, Saginaw, Mich.
Starrett Co., L. S., Athol, Mass.
- Safes and Vaults.**
York Safe & Lock Co., York, Pa.
- Safety Appliance.** (For Elevator.)
Roth Elevator Safety Co., Inc., Baltimore, Md.
- Sand.**
Arundel Sand & Gravel Co., Baltimore, Md.
Kirkpatrick Sand & Cem. Co., Birmingham, Ala.
Lathrop & Co., C. P., Richmond, Va.
- Sand Rammers.**
Chicago Pneumatic Tool Co., Chicago, Ill.
- Sap Stain Preventive.**
Church & Dwight Co., New York, N. Y.
- Sash Chain.**
Niagara Falls Metal Stamping Works, Niagara Falls, N. Y.
- Saws.**
Gibbes Machinery Co., Columbia, S. C.
Huther Bros. Saw Mfg. Co., Rochester, N. Y.
Smith Machine Co., H. B., Smithville, N. J.
Syndor Pump & Well Co., Richmond, Va.
- Saws.** (Band.)
Smith Machine Co., H. B., Smithville, N. J.
- Saws.** (Hack.)
Starrett Co., L. S., Athol, Mass.
- Sawmill Dogs.**
Soule Steam Feed Works, Meridian, Miss.
- Sawmills.**
Appomattox Iron Wks. & Sup. Co., Petersburg, Va.
Galveston Iron Works, Galveston, Ga.
- Sawmill Machinery.**
Bailey-Lebby Co., Charleston, S. C.
Cameron & Barkley Co., Charleston, S. C.
Chase Turbine Mfg. Co., Orange, Mass.
Gibbes Machinery Co., Columbia, S. C.
Knight Mfg. Co., Canton, O.
Lane Mfg. Co., Montpelier, Vt.
Mecklenburg Iron Works, Charlotte, N. C.
Price Mch. Co., S. M., Norfolk, Va.
Schuchert's Sons Co., J. S., Macon, Ga.
Southern Engine & Boiler Works, Jackson, Tenn.
Syndor Pump & Well Co., Richmond, Va.
Union Iron Works Co., Selma, Ala.
- Saw Sharpeners.**
Abrasive Material Co., Philadelphia, Pa.
Carburedum Co., Niagara Falls, N. Y.
Norton Co., Worcester, Mass.
Vitrified Wheel Co., Westfield, Mass.
- Saw Sharpeners and Files.** (Cotton Gln.)
Carver Cotton Gln Co., East Bridgewater, Mass.
- Scales.**
Howe Scale Co., New York, N. Y.
Rome Scale & Mfg. Co., Rome, Ga.
Standard Scale & Supply Co., Pittsburg, Pa.
- Screening Apparatus.**
Walker & Elliott, Wilmington, Del.
- Screens.** (Fly, Window and Door.)
New Jersey Wire Cloth Co., Trenton, N. J.
- Screens.** (Mining.)
Cresson Co., Geo. V., Philadelphia, Pa.
Erdle Perforating Co., Rochester, N. Y.
Hendrick Mfg. Co., Carbondale, Pa.
Jeffrey Mfg. Co., Columbus, O.
Mundt & Sons, Charles, Jersey City, N. J.
McLanahan-Stone Mach. Co., Hollidaysburg, Pa.
New Jersey Wire Cloth Co., Trenton, N. J.
Waterloo Cement Mchry. Co., Waterloo, Iowa.
- Sealer and Stamper.** (Envelope.)
Commercial Sales & Mfg. Co., Oberlin, O.
- Searchlights.**
Ft. Wayne Electric Works, Ft. Wayne, Ind.
- Separators.** (Dust.)
Buffalo Forge Co., Buffalo, N. Y.
Raymond Bros. Impact Pulv. Co., Chicago, Ill.
Savannah Blow Pipe Co., Savannah, Ga.
- Sewer Pipe Machinery.**
Taplin-Rice-Clerkin Co., Akron, O.
- Sewer Pipe.** (Vitrified.)
Bibb Sewer Pipe Co., Macon, Ga.
Cannelton Sewer Pipe Co., Cannelton, Ind.
Carolina Portland Cement Co., Charleston, S. C.
Pittsburgh-Buffalo Co., Pittsburgh, Pa.
Pomona Terra-Cotta Co., Pomona, N. C.
Stevens Sons Co., H., Macon, Ga.
- Shades.**
Holophane Co., Newark, Ohio.
- Shafting.** (Polished Steel.)
Field & Co., Inc., Philadelphia, Pa.
Jones & Laughlin Steel Co., Pittsburgh, Pa.
Republic Iron & Steel Co., Youngstown, O.
- Shafting Boxes.**
Hyatt Roller Bearing Co., Newark, N. J.
- Shafting.** (See Pulleys, Shafting and Hangers.)
- Shapes.** (Rolled Steel, Brass and Bronze.)
United States Metal Products Co., New York, N. Y.
- Sharpening Stones.**
Norton Co., Worcester, Mass.
Vitrified Wheel Co., Westfield, Mass.
- Shears.** (Metal.)
Royersford Fdry. & Mach. Co., Royersford, Pa.
- Sheet Brass and Copper.**
Husey & Co., C. G., Pittsburg, Pa.
Merchant & Evans Co., Philadelphia, Pa.
- Sheet Metal Working Machinery.**
Bliss Co., E. W., Brooklyn, N. Y.
- Sheet Steel and Iron.**
American Rolling Mill Co., Middletown, O.
American Sheet & Tin Plate Co., Pittsburgh, Pa.
Cincinnati Iron & Steel Co., Cincinnati, O.
La Belle Iron Works, Steubenville, O.
Republic Iron & Steel Co., Youngstown, O.
Tennessee Coal, Iron & R. R. Co., B'gh'm, Ala.
Wood Iron & Steel Co., Alan, Philadelphia, Pa.
Youngstown Sheet & Tube Co., The, Youngstown, O.
- Shingles.** (Metal.)
Burris & Co., John T., Anderson, S. C.
Carolina Portland Cement Co., Charleston, S. C.
Chattanooga Rfg. & Fdry. Co., Chattanooga, Tenn.
Cincinnati Sheet Metal & Rfg. Co., Cincinnati, O.
Corrigan Sheet Metal Roofing Co., Philadelphia, Pa.
Edwards Mfg. Co., Cincinnati, O.
Hyndman Roofing Co., Cincinnati, O.
Milwaukee Corrugating Co., Milwaukee, Wis.
- Shipping Tags.**
Dennison Mfg. Co., Boston, Mass.
- Shredders.** (Bark, Chip, etc.)
Williams Pat. Crush. & Pul. Co., The, Chicago, Ill.
- Shutters.** (Iron.)
Bolles Iron & Wire Works, J. E., Detroit, Mich.
Chesapeake Iron Works, Baltimore, Md.
- Shutters.** (Steel Rolling.)
Kinneair Mfg. Co., Columbus, O.
- Shutters.** (Tin Clad.)
Viebro Mfg. Co., Newburyport, Mass.
- Siding and Roofing.** (Bird Band and Chipped Slate Surfaced.)
Birmingham & Seaman Co., Chicago, Ill.
- Signs.** (Metal Lithographed.)
Southern Can Co., Baltimore, Md.
- Signs.** (Road, Street, Outdoor, Advt.)
Indestructible Sign Co., Bishopville, S. C.
- Skylights and Cornices.**
Milwaukee Corrugating Co., Milwaukee, Wis.
New Orleans Rfg. & Metal Wks., New Orleans, La.
- Slate Roofing.** [See Roofing (Slate).]
- Slate.** (Structural, Sanitary, etc.)
Carolina Portland Cement Co., Charleston, S. C.
East Bangor Consol. Slate Co., East Bangor, Pa.
Genuine Bangor Slate Co., Easton, Pa.
Hower, J. K., Slatington, Pa.
- Slaters' Tools.**
Galt & Sons, John, New York, N. Y.
- Sluice Gates and Appliances.**
Coldwell-Wilcox Co., Newburgh, N. Y.
- Smokestacks.** (Iron and Steel.)
Chattanooga Roller & Tank Co., Chat'n'ga, Tenn.
Keeler Co., E., Williamsport, Pa.
Lombard Iron Works, Augusta, Ga.
Petroleum Iron Works Co., Sharon, Pa.
Ruemell-Dawley Mfg. Co., St. Louis, Mo.
Schofield's Sons Co., J. S., Macon, Ga.
Virginia Bridge & Iron Co., Roanoke, Va.
- Smokestacks.** (Steel-Concrete.)
Weber Chimney Co., Chicago, Ill.
- Spikes.** [See Nails and Spikes.]
- Springs.** (Machinery, Railway, Spiral.)
American Steel & Wire Co., Chicago, Ill.
Cary Spring Works, New York, N. Y.
Raymond Mfg. Co., Ltd., Corry, Pa.
- Sprinklers.** (Automatic.)
General Fire Extinguisher Co., Providence, R. I.
- Sprinkler Systems.** (Automatic.)
General Fire Extinguisher Co., Providence, R. I.

Stamp Mills.
Mecklenburg Iron Works, Charlotte, N. C.

Stamps. (Brass, Rubber.)
Bennett Rubber Stamp & Seal Co., Atlanta, Ga.
Bennett Seal & Stamp Co., Atlanta, Ga.

Standpipes.
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.
Chicago Bridge & Iron Works, Chicago, Ill.
Hartley Boiler Works, Montgomery, Ala.
Keller Co., E. Williamsport, Pa.
Petroleum Iron Works Co., Sharon, Pa.
Ruemml-Dawley Mfg. Co., St. Louis, Mo.

Stapling Machinery. (Fruit Package Basket, etc.)
Karnack Machine Co., St. Joseph, Mich.

Stationers. (Envelopes, Letter and Bill Heads, etc.)
Franklin Press Co., Petersburg, Va.
Young & Selden Co., Baltimore, Md.

Steam Feeds.
Hale Steam Feed Works, Meridian, Miss.

Steam Fitters' Supplies.
Sunders' Sons, D. Yonkers, N. Y.

Steam Heating.
Keller Co., E. Williamsport, Pa.
Pek-Hammond Co., The, Cincinnati, O.

Steamship Lines.
Baltimore Steam Packet Co., Baltimore, Md.
Chesapeake Steamship Co., Baltimore, Md.
Merchant & Miners' Trans. Co., Baltimore, Md.

Steam Separators.
Hopes Mfg. Co., Springfield, O.
Lidstrom's Mach. Wks., John T., Allentown, Pa.

Steam Shovel Chains.
Weiner Chain & Iron Co., Lebanon, Pa.

Steam Shovels. (See Excavating Machinery.)

Steam Shovels. (Revolving.)
Browning Engineering Co., Cleveland, O.

Steam Specialties.
Powell Co., Wm., Cincinnati, O.

Steam Traps.
American Blower Co., Detroit, Mich.
Jenkins Bros., New York, N. Y.
Lidstrom's Mach. Wks., John T., Allentown, Pa.

Steel.
American Rolling Mill Co., Middletown, O.
Dietrich Bros., Baltimore, Md.
Field & Co., Inc., Philadelphia, Pa.
Hoffman & Co., R. C., Baltimore, Md.
Jones & Laughlin Steel Co., Pittsburgh, Pa.
Lehigh Iron Works, Steubenville, O.
Oiler Iron & Steel Co., Pittsburgh, Pa.
Republic Iron & Steel Co., Youngstown, O.
Tennessee Coal, Iron & R. R. Co., Birmingham, Ala.
Wood Iron & Steel Co., Allentown, Pa.

Steel. (Open Hearth.)
Erie Forge Co., Erie, Pa.

Steel. (Tool.)
Field & Co., Inc., Philadelphia, Pa.
Jensons & Sons, Inc., Wm., St. Louis, Mo.

Steel. (Vanadium.)
Carnegie Steel Co., Pittsburgh, Pa.

Steel Buildings. (Designers, Builders.)
American Bridge Co. of New York, New York, N. Y.
Chesapeake Iron Works, Baltimore, Md.
Chicago Bridge & Iron Works, Chicago, Ill.
Farrar Bridge Co., Pittsburgh, Pa.
Haworth Valley Bridge & Iron Co., Leavenworth, Kan.
Phoenix Iron Co., Philadelphia, Pa.
Roanoke Bridge Co., Roanoke, Va.
Schreiber & Sons Co., The L., Cincinnati, O.
Snead Architectural Iron Works, Louisville, Ky.
Virginia Bridge & Iron Co., Roanoke, Va.

Steel Casting.
Greulich Steel Castings Co., Lansdowne, Pa.
Hoffman & Co., R. C., Baltimore, Md.
Halsace Steel Casting Co., Pittsburgh, Pa.

Steel Forms. (For Concrete Construction.)
Blaw Col. Steel Centering Co., Pittsburgh, Pa.

Steel Plate Work.
Casey-Hedges Co., Chattanooga, Tenn.
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.
Chicago Bridge & Iron Works, Chicago, Ill.
Hoffman & Co., R. C., Baltimore, Md.
Russell Iron Co., Philadelphia, Pa.
Republic Iron & Steel Co., Youngstown, O.
Ruemml-Dawley Mfg. Co., St. Louis, Mo.

Steel Protector. (Concrete Curb Steps, etc.)
[See Protector Steel.]

Steel Sheet Piling.
Jones & Laughlin Steel Co., Pittsburgh, Pa.

Stencils.
Baltimore Office Supply Co., Baltimore, Md.
Dixie Seal & Stamp Co., Atlanta, Ga.

Steps. (Extension, for Railroad Coaches.)
Blake Car Step Works, Charlotte, N. C.

Stirrups. (Building.)
Chesapeake Iron Works, Baltimore, Md.

Stock Certificates, Bonds and Seals.
Baltimore Office Supply Co., Baltimore, Md.
Dixie Seal & Stamp Co., Atlanta, Ga.

Stokers. (Mechanical.)
Babcock & Wilcox Co., New York, N. Y.
Harrisburg Fdry. & Mach. Works, Harrisburg, Pa.
Westinghouse Machine Co., Pittsburgh, Pa.

Storage Batteries.
McClellan Battery Co., The, Philadelphia, Pa.
McClellan Electric Co., Baltimore, Md.
Westinghouse Machine Co., Pittsburgh, Pa.

Strainers.
Cameron Steam Pump Wks., A. S., New York, N. Y.

Structural Steel and Iron.
American Bridge Co. of New York, New York, N. Y.
Belmont Iron Works, Inc., Philadelphia, Pa.
Carnegie Steel Co., Pittsburgh, Pa.
Chesapeake Iron Works, Baltimore, Md.
Chicago Bridge & Iron Works, Chicago, Ill.
Cincinnati Iron & Steel Co., Cincinnati, O.
Des Moines Bridge & Iron Co., Des Moines, Ia.
Dietrich Bros., Baltimore, Md.
Hoffman & Co., R. C., Baltimore, Md.
Jones & Laughlin Steel Co., Pittsburgh, Pa.
Lehigh Valley Bridge & Iron Co., Leavenworth, Kan.
Phoenix Iron Co., Philadelphia, Pa.
Republic Iron & Steel Co., Youngstown, O.

Roanoke Bridge Co., Roanoke, Va.
Roanoke Iron Works, Inc., Roanoke, Va.
Schreiber & Sons Co., The L., Cincinnati, O.
Snead Architectural Iron Works, Louisville, Ky.
Tennessee Coal, Iron & R. R. Co., Birmingham, Ala.
Vincennes Bridge Co., Vincennes, Ind.
Virginia Bridge & Iron Co., Roanoke, Va.
York Bridge Co., York, Pa.

Stamp Pullers.
Zimmerman Steel Co., M. R., Lane Twp., Pa.

Sugar-Mill Machinery.
Pratt Engineering & Mach. Co., Atlanta, Ga.

Sulphur.
Union Sulphur Co., New York, N. Y.

Super-Heaters. (Steam.)
Babcock & Wilcox Co., New York, N. Y.
Power Specialty Co., New York, N. Y.

Surveying Instruments.
Keuffel & Esser, Hoboken, N. J.
Weber & Co., F., Philadelphia, Pa.

Switchboards. Switches, etc.
Engberg's Elect. & Mech. Wks., St. Joseph, Mich.
Fort Wayne Electric Works, Fort Wayne, Ind.
General Electric Co., Schenectady, N. Y.
Westinghouse Electric & Mfg. Co., Pittsburgh, Pa.

Switches. (See Railroad Frogs and Switches.)

Switchstands.
American Valve & Meter Co., Cincinnati, O.
Weir Frog Co., Cincinnati, O.

Tackle Blocks. (For Wire or Manila Rope.)
Patterson Co., W. W., Pittsburgh, Pa.

Tags.
Dennison Mfg. Co., Boston, Mass.

Tanks. (Iron and Steel.)
American Water Softener Co., Philadelphia, Pa.
Caldwell Co., Inc., W. B., Louisville, Ky.
Casey-Hedges Co., Chattanooga, Tenn.
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.
Chicago Bridge & Iron Works, Chicago, Ill.
Cole Mfg. Co., R. D., Newnan, Ga.
Des Moines Bridge & Iron Co., Des Moines, Ia.
Gem City Boiler Co., Dayton, O.
Harry Bros. Co., Dallas, Tex.
Hartley Boiler Works, Montgomery, Ala.
Keller Co., E. Williamsport, Pa.
Kennelott Co., Chicago Heights, Ill.
Lombard Iron Works, Augusta, Ga.
Lookout Boiler & Mfg. Co., Chattanooga, Tenn.
New Orleans Hfg. & Metal Wks., New Orleans, La.
Oil City Boiler Co., Oil City, Pa.
Petroleum Iron Works Co., Sharon, Pa.
Ruemml-Dawley Mfg. Co., St. Louis, Mo.
Sealife & Sons Co., Wm. B., Pittsburgh, Pa.
Schofield's Sons Co., J. S., Macon, Ga.
Snyder Pump & Well Co., Richmond, Va.
Tennessee Metal Culvert Co., Nashville, Tenn.
Virginia Bridge & Iron Co., Roanoke, Va.
Walsh & Weldner Boiler Co., Chattanooga, Tenn.

Tanks. (Wood.)
Baltimore Cooperage Co., Baltimore, Md.
Caldwell Co., Inc., W. B., Louisville, Ky.
Davis & Son, J. M., Palaka, Fla.
Snyder Pump & Well Co., Richmond, Va.

Tapes. (Measuring.)
Keuffel & Esser, Hoboken, N. J.
Larkin Rule Co., Saginaw, Mich.
Starrett Co., L. B., Athol, Mass.

Telephones. (Supplies, Equipment.)
Piedmont Electric Co., Asheville, N. C.
Western Electric Co., New York, N. Y.

Telephone Cable.
Western Electric Co., New York, N. Y.

Telephone Poles. (See Cross-ties.)
Intern'l. Cords & Constr. Co., Galveston, Tex.
Western Electric Co., New York, N. Y.

Terra-cotta.
Atlanta Terra-cotta Co., East Point, Ga.
Bibb Sewer Pipe Co., Macon, Ga.
Maryland Terra-cotta Co., Baltimore, Md.
Pomona Terra-cotta Co., Pomona, N. C.
Southern Building Material Co., Norfolk, Va.
Stevens' Sons Co., H., Macon, Ga.

Threshers.
Cardwell Machine Co., Richmond, Va.
Case Threshing Mch. Co., J. L., Racine, Wis.

Tie Plates. (Railways.)
Virginia Railway Supply Co., Norfolk, Va.

Tiles. (Drain, Floor, etc.)
Amer. Enam. Brick & Tile Co., New York, N. Y.
Bibb Sewer Pipe Co., Macon, Ga.
Oconee Brick & Tile Co., Milledgeville, Ga.

Tiles. (Monastic.)
Dagostin & Angelini Bros., Montgomery, Ala.
Southern Mosaic Tile Co., Birmingham, Ala.

Tiles. (Roofing.)
National Roofing Tile Co., Lima, O.

Tin and Terne Plates.
American Sheet & Tin Plate Co., Pittsburgh, Pa.
Merchant & Evans Co., Philadelphia, Pa.

Tobacco Machinery.
Buckeye Iron & Brass Works, Dayton, O.
Cardwell Machine Co., Richmond, Va.

Tool Steels.
Jensons & Sons, Inc., Wm., St. Louis, Mo.

Tools. (Machinists').
Manning, Maxwell & Moore, Inc., New York, N. Y.
Morris Twist Drill & Mch. Co., New Bedford, Mass.

Tools. (Mechanical.)
Starrett Co., L. B., Athol, Mass.

Tools. (Pneumatic.)
American Compressor & Pump Co., Baltimore, Md.
Chicago Pneumatic Tool Co., Chicago, Ill.
Independent Pneumatic Tool Co., Chicago, Ill.
Ingersoll-Rand Co., New York, N. Y.

Torches.
Wall Mfg. Supply Co., F., Allegheny, Pa.

Towers. (Steel and Wood.)
Baltimore Cooperage Co., Baltimore, Md.
Caldwell & Co., Inc., Wm. B., Louisville, Ky.
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.
Chicago Bridge & Iron Works, Chicago, Ill.
Cole Mfg. Co., R. D., Newnan, Ga.
Des Moines Bridge & Iron Co., Des Moines, Ia.

Traction Engines.
Case Threshing Mch. Co., J. L., Racine, Wis.

Tramway. (Overhead.)
Northern Engineering Works, Detroit, Mich.
Speidel, J. G., Reading, Pa.

Tramway. (Wire Rope.)
Broderick & Bascom Rope Co., St. Louis, Mo.
Caldwell & Sons Co., H. W., Chicago, Ill.
Link-Belt Co., Nictown (Philadelphia), Pa.

Transformers.
Crocker-Wheeler Co., Ampere, N. J.
Mooney Electric Co., St. Louis, Mo.
Triumph Electric Co., Cincinnati, O.

Transmission Line Supplies. (Electric.)
Electrical Engineers' Equip. Co., Chicago, Ill.

Trench Excavator.
American Steel Dredge Co., Ft. Wayne, Ind.
Fairbanks Steam Shovel Co., Marion, O.
Morgan Machine Co., Chicago, Ill.

Trucks. (Motor.)
Schacht Motor Car Co., Cincinnati, Ohio.

Trucks. (Platform, Freight, Mill, Factory, etc.)
Chase Fdry. & Mfg. Co., Columbus, O.
Clark Co., G. F., Windsor Locks, Conn.
Howe Scale Co., New York, N. Y.
Rome Scale & Mfg. Co., Rome, Ga.

Trucks. (Storage Battery Auto.)
Westinghouse Machine Co., Pittsburgh, Pa.

Trucks. (Wood and Steel for Portable Machinery.)
Empire Manufacturing Co., Quincy, Ill.

Trust Companies. (See Bankers and Brokers.)

Tube Well Strainers.
Cook Well Co., St. Louis, Mo.

Tubes. (Boiler.)
Cincinnati Iron & Steel Co., Cincinnati, O.
National Tube Co., Pittsburgh, Pa.

Tubing.
Field & Co., Inc., Philadelphia, Pa.
La Belle Iron Works, Steubenville, O.
National Tube Co., Pittsburgh, Pa.
Youngstown Sheet & Tube Co., The, Youngstown, O.

Turbines. (Hydraulic.)
Allis-Chalmers Co., Milwaukee, Wis.
Davis Foundry & Machine Works, Rome, Ga.
Dayton Globe Iron Works Co., Dayton, O.
Lefell & Co., James, Springfield, O.
Pole Engineering & Mach. Co., Baltimore, Md.
Smith Co., S. Morgan, York, Pa.
Trump Mfg. Co., Springfield, O.

Turbines. (Steam.)
Allis-Chalmers Co., Milwaukee, Wis.
De Laval Steam Turbine Co., Trenton, N. J.
Emerson Steam Pump Co., Alexandria, Va.
F. L. Wayne Electric Works, Ft. Wayne, Ind.
General Electric Co., Schenectady, N. Y.
Southwest Fdry. & Mch. Co., Philadelphia, Pa.
Terry Steam Turbine Co., New York, N. Y.
Western Electric Co., New York, N. Y.
Westinghouse Machine Co., Pittsburgh, Pa.

Turntables.
Virginia Bridge & Iron Co., Roanoke, Va.

Turpentine.
Atlantic Turpentine & Refining Co., Savannah, Ga.

Tuyeres. (Copper and Bronze.)
Keystone Bronze Co., Pittsburgh, Pa.

Twine.
American Manufacturing Co., New York, N. Y.
Columbian Rope Co., Auburn, N. Y.
Plymouth Cordage Co., North Plymouth, Mass.
Turner Co., J. Spencer, New York, N. Y.
Whitlock Cordage Co., New York, N. Y.

Twine Machinery.
Haskell-Dawes Machine Co., Boston, Mass.

Twisting Machinery.
Haskell-Dawes Machine Co., Boston, Mass.

Unions.
Dart Manufacturing Co., R. M., Providence, R. I.

Vacuum Cleaning Apparatus.
Blaisdell Machinery Co., Bradford, Pa.

Valves.
Bourbon Copper & Brass Wks. Co., Cincinnati, O.
Columbian Iron Works, Chattanooga, Tenn.
Frick Co., The, Waynesboro, Pa.
Glamorgan Pipe & Foundry Co., Lynchburg, Va.
Jenkins Bros., New York, N. Y.
National Tube Co., Pittsburgh, Pa.
Powell Co., Wm., Cincinnati, O.
York Mfg. Co., York, Pa.

Varnish.
Berry Bros., Ltd., Detroit, Mich.
Glidden Varnish Co., Cleveland, O.

Vener Machines.
Titus, E. E., Petersburg, Va.

Ventilating Apparatus. (Engineers' and Contractors.)
American Blower Co., Detroit, Mich.
Buffalo Forge Co., Buffalo, N. Y.
Pek-Hammond Co., Cincinnati, O.
Sturtevant Co., R. F., Hyde Park, Mass.

Ventilators.
Merchant & Evans Co., Philadelphia, Pa.

Wagons. (Dump.)
Eagle Wagon Works, Auburn, N. Y.
Troy Wagon Works Co., Troy, O.
Western Wheel Scraper Co., Aurora, Ill.

Wagons. (Ice, Bakers' and Laundry.)
Koenig & Lohrs Wagon Co., Quincy, Ill.

Wall Plaster.
King & Co., J. B., New York, N. Y.

Wall Plugs. (Galvanized.)
Niagara Falls Metal Stamping Works, Niagara Falls, N. Y.
Wicks & Co., Milton O., Glen Cove, N. Y.

Wall Tiles.
Niagara Falls Metal Stamping Works, Niagara Falls, N. Y.

Page Woven Wire Fence Co., Adams, Mich.

Washers. (Ore and Phosphate.)
Bailley-Lobby Co., Charleston, S. C.
Cameron & Barkley Co., Charleston, S. C.
McLennan-Stone Mach. Co., Hollidaysburg, Pa.

Washers and Rivets. (See Bolts, Nuts, Rivets, Studs and Washers.)

Water Filters. (See Filters, Water, for Domestic and Industrial Purposes.)

Water Meters.
American Valve & Meter Co., Cincinnati, O.

Waterproofing. (For Brick Work.)
Barrett Mfg. Co., Philadelphia, Pa.
Carolina Portland Cement Co., Charleston, S. C.
National Roofing Co., Tonawanda, N. Y.

Waterproofing. (For Concrete.)
Barrett Mfg. Co., Philadelphia, Pa.
National Roofing Co., Tonawanda, N. Y.

Waterproof Compound. (Liquid.)
Carolina Portland Cement Co., Charleston, S. C.
National Roofing Co., Tonawanda, N. Y.

Water-Softening Apparatus. (Purifying.)
American Water Softener Co., Philadelphia, Pa.
Dodge Manufacturing Co., Mishawaka, Ind.
Gem City Boiler Co., Dayton, O.
Kennelott Co., Chicago Heights, Ill.
N. Y. Cont. Jewell Filtration Co., New York, N. Y.
Roberts Filter Mfg. Co., Philadelphia, Pa.
Sealife & Sons Co., Wm. B., Pittsburgh, Pa.
Tucker & Laxton, Charlotte, N. C.

Water Supply Systems. (Town, Home, Railroad, etc.)
Rife Engine Co., New York, N. Y.

Water-Wheels. (See Turbines. (Hydraulic).)

Water-Wheels Supplies and Appliances.
American Cast Iron Pipe Co., Birmingham, Ala.
American Pipe & Constr. Co., Philadelphia, Pa.
Bibb Sewer Pipe Co., Macon, Ga.
Blount, C. F., Atlanta, Ga.
Bourbon Copper & Brass Wks. Co., Cincinnati, O.
Caldwell-Wilcox Co., Newburgh, N. Y.
Columbian Iron Works, Chattanooga, Tenn.
Glamorgan Pipe & Foundry Co., Lynchburg, Va.
Keystone Pump & Well Eng. Co., Beaver Falls, Pa.
Lehighite Co., The, Philadelphia, Pa.
McWane Pipe Works, Lynchburg, Va.
Pomona Terra-cotta Co., Pomona, N. C.
Stevens' Sons Co., H., Macon, Ga.
U. S. Cast Iron Pipe & Fdry. Co., New York, N. Y.

Weigher. (Recording Liquid.)
Worthington, Henry R., New York, N. Y.

Well Contractors. (Oil, Artesian, etc.)
Cook Well Co., The, St. Louis, Mo.
Hughes Specialty Well Drill Co., Charleston, S. C.
Stothoff Bros., Flemington, N. J.
Snyder Pump & Well Co., Richmond, Va.

Well Tools and Supplies.
Cook Well Co., The, St. Louis, Mo.
Keystone Pump & Well Eng. Co., Beaver Falls, Pa.
Williams Bros., Ithaca, N. Y.

Wheels and Axles.
Empire Manufacturing Co., Quincy, Ill.
Oliver Mfg. Co., W. J., Knoxville, Tenn.

Wheelbarrows and Trucks.
Syracuse Chilled Plow Co., Syracuse, N. Y.

Wheels. (Steel and Steel Tired.)
Carnegie Steel Co., Pittsburgh, Pa.
Empire Manufacturing Co., Quincy, Ill.

Window Frames and Sashes. (Fireproof.)
Detroit Steel Products Co., Detroit, Mich.
United States Metal Products Co., New York, N. Y.
Volkmann & Co., Chicago, Ill.

Window Guards. (Wire.) [See Wire Goods.]

Windmills.
Baltimore Cooperage Co., Baltimore, Md.
Caldwell Co., Inc., W. B., Louisville, Ky.

Wire Insulating.
General Electric Co., Schenectady, N. Y.

Wire. (Barbed Wire, etc.)
American Steel & Wire Co., Chicago, Ill.
Roebeling's Sons Co., J. A., Trenton, N. J.
Youngstown Sheet & Tube Co., Youngstown, O.

Wire Cloth. (Iron, Steel, Brass, etc.)
American Steel & Wire Co., Chicago, Ill.
Caldwell & Sons Co., The H. W., Chicago, Ill.
Diamond Wire Products Co., Columbus, O.
Meyers Mfg. Co., Fred J., Hamilton, O.
New Jersey Wire Cloth Co., Trenton, N. J.
Wight & Co., W. N., New York, N. Y.

Wire Goods.
Bolles Iron & Wire Works, J. E., Detroit, Mich.
Buckeye Wire & Iron Works Co., Columbus, O.
Cincinnati Mfg. Co., Cincinnati, O.
Diamond Wire Products Co., Columbus, O.
Dow Wire Works Co., Louisville, Ky.
Dufur & Co., Baltimore, Md.
Dufur, Haggott & Co., Baltimore, Md.
Meyers Mfg. Co., Fred J., Hamilton, O.
New Jersey Wire Cloth Co., Trenton, N. J.

Wire Netting.
American Steel & Wire Co., Chicago, Ill.
New Jersey Wire Cloth Co., Trenton, N. J.

Wire Rope.
American Steel & Wire Co., Chicago, Ill.
Broderick & Bascom Rope Co., St. Louis, Mo.
Contractors' Plant Mfg. Co., Inc., Buffalo, N. Y.
Roebeling's Sons Co., J. A., Trenton, N. J.
Williamsport Wire Rope Co., Williamsport, Pa.
Youngstown Sheet & Tube Co., Youngstown, O.

Wire Rope Clips.
American Hoist & Derrick Co., St. Paul, Minn.

Wire Rope Thimbles.
Broderick & Bascom Rope Co., St. Louis, Mo.

Wood Blocks. (For Paving and Factory Floors.)
U. S. Wood Preserving Co., New York, N. Y.

Woodboring Machines.
Chicago Pneumatic Tool Co., Chicago, Ill.
Ingersoll-Rand Co., New York, N. Y.

Wood-Fiber Plaster.
King & Co., J. B., New York, N. Y.

Wood Pipes. (For Water, etc.)
Wyckoff & Son Co., A., Elmira, N. Y.

Woodworking Machinery.
Gibbes Mch. Co., Columbia, S. C.
Kline, Lewis T., Alpena, Mich.
Knight Mfg. Co., Canton, O.
Lane Mfg. Co., Montpelier, Vt.
Ober Mfg. Co., Chagrin Falls, O.
Shimer & Sons, Samuel J., Milton, Pa.
Smith-Courtney Co., Richmond, Va.
Smith Machine Co., H. B., Smithville, N. J.
Wilmington Iron Works, Wilmington, N. C.

Yarn. (Tatted Sisal.)
American Manufacturing Co., New York, N. Y.
Columbian Rope Co., Auburn, N. Y.
Plymouth Cordage Co., North Plymouth, Mass.
Whitlock Cordage Co., New York, N. Y.

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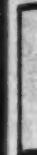
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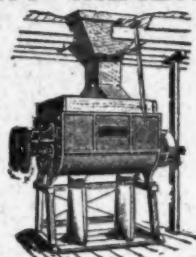
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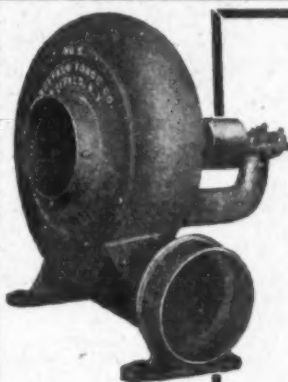
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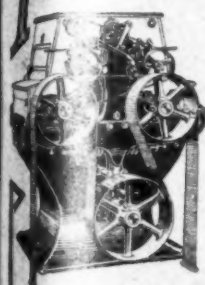
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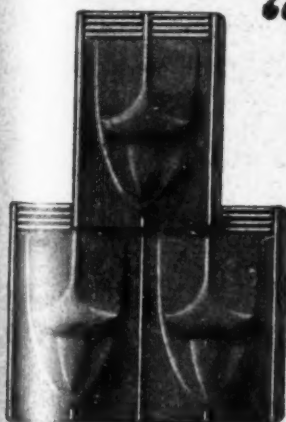
86-88 WORTH STREET, NEW YORK, N. Y.

Chicago St. Louis Boston Baltimore San Francisco London, Eng. Manchester, Eng.

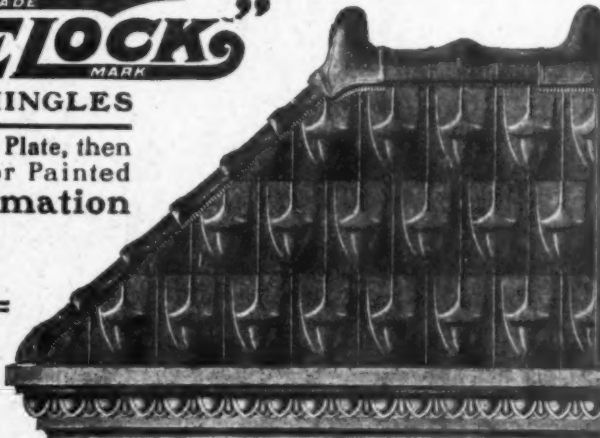
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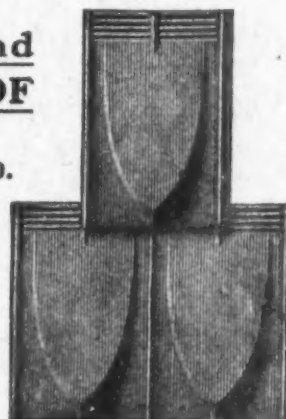


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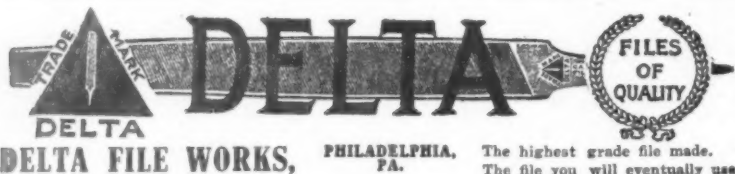
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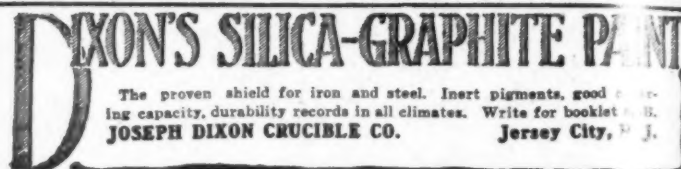
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